JRC Scientific and Technical Reports

Scientific, Technical and Economic Committee for Fisheries (STECF)

Report of the SGMOS-10-05

Working Group on Fishing Effort Regimes Regarding Annexes IIA, IIB and IIC of TAC & Quota Regulations, Celtic Sea and Bay of Biscay

27 September – 1 October 2010, EDINBURGH, SCOTLAND

Prepared in draft by

SGMOS-10-04: 14-18 June 2010 IPIMAR, LISBON, PORTUGAL

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SCIENTIFIC, TECHNICAL AND ECONOMIC COMMITTEE FOR FISHERIES (STECF)

STECF COMMENTS ON THE REPORT OF THE SGMOS-10-05 WORKING GROUP REPORT

11 SEPTEMBER – 1 OCTOBER 2010, EDINBURGH, SCOTLAND

PREPARED IN DRAFT BY SGMOS-10-04: 14-18 June, IPIMAR, LISBON, PORTUGAL

STECF UNDERTOOK THE REVIEW DURING THE PLENARY MEETING HELD IN BARZA D'ISPRA (ITALY) 11-15 APRIL 2011

1. STECF OBSERVATIONS

Introduction

The STECF-SGMOS Effort Management WG (previously SGRST WG) has, since 2004 performed the task of collating and evaluating effort and catch data for fisheries operating under the Annex II A-C regimes. In 2010 the WG was asked to provide analysis according to the revised cod plan with its simplified gear categories. A significant management development in the new cod plan was the direct linking of effort management to achievement of fishing mortality targets. Crucial to this process was the establishment of effort baselines and an annual evaluation and adjustment of effort. The latter has brought the work of the SGMOS Effort management WG into sharp focus and the effort material continues to be the subject of close scrutiny and debate.

During 2010, ongoing discussions about a cod plan for the Celtic Sea led to a request for STECF to update the effort information first provided for this area in 2008. The 2010 STECF- SGMOS effort meetings also evaluated effort and catches in the Baltic Sea and two other existing management regimes, namely the Western Waters Regulation and Deep Sea Regulation. In view of the requirement once again for evaluation of effort data, the group was well placed to deal with these. However, the deep sea TORs required specialist input and suitable experts attended the SGMOS 10-05 meeting. Two new areas of work were requested and developed by the SGMOS effort group in 2010, namely a review of the Bay of Biscay effort development and also a first look at the relationships between fishing mortality and effort.

Approach adopted by the Working Group

The data call was issued on 27th April 2010 (corrigendum 12th May 2010).

The Working Group met on two occasions in 2010. Inter-sessional work was carried out prior to the final meeting. This proved particularly important with respect to the complete revision of the French data series and for seeking clarification over the submissions provided by Spain for Atlantic waters of the Iberian peninsula. STECF notes that in 2010, data shortfalls and data revisions were largely dealt with prior to the second meeting and the group's progress was not as impaired as previous years. One data revision, involving Belgian effort data, was received and incorporated into the SGMOS effort databases shortly after the final meeting. A decision was taken not to revise all the figures and tables in the effort report.

The group agreed that the extensive and diverse data and issues addressed would benefit from presentation in three reports covering respectively Baltic Sea (part 1) Annex II and the Celtic Sea (part 2) Deep Sea and Western Waters and (part 3). STECF notes that a decision was taken to continue to provide some of the material on the STECF website in order to produce manageable reports.

Progress and Status of Reports

The report covering the Baltic Area (STECF SGMOS 09 05 Report part 1) was completed in October 2010 and was reviewed at the November 2010 STECF meeting

The report covering the Annex II effort management regime (part 2) is complete and the review completed at this meeting.

The report covering Deep Sea and western Waters Report (part 3) is incomplete and has not been reviewed at this plenary meeting. Summary figures and tables have been produced but these require further scrutiny before text can be finalised. STECF suggests this part is reviewed by correspondence.

Data underpinning the above reports are considered final for 2010 and summary material from the effort database has been made available on the FTP site for use by the Commission and STECF members and on the STECF website.

Terms of reference

The TORs for STECF-SGMOS WGs in 2010 can be consulted on the meeting's web site (https://stecf.jrc.ec.europa.eu/meetings/2010).

Overall, the TOR were extensive and demanding. STECF notes that the Commission has acknowledged the workload of the group and reduced the TORs for some areas (for example the Western waters and Deep Sea work). While some of the evaluations of effort and catch has been ongoing for a number of years and have established routines associated with them, work associated with new requests is more developmental. For TORs associated with these new requests, some progress was made but the issues could not be tackled comprehensively.

2. TERMS OF REFERENCE

STECF is requested to review the reports of the SGMOS-10-05 Working Group of September 27 – October 1, 2010 (Edinburgh) meeting, evaluate the findings and make any appropriate comments and recommendations.

STECF is requested to review

1. the report of the STECF Expert Working Group on Fishing Effort Regime Annex IIa of the TAC & Quota Regulation, evaluate the findings and make any appropriate comments and recommendations.

2. the report of the STECF Expert Working Group on Fishing Effort Regime Deep-Sea & Western Waters, evaluate the findings and make any appropriate comments and recommendations.

When reviewing this STECF WG report, the STECF plenary is requested to discuss a possible endorsement of correction factors established by the STECF EWG by taking into account evaluations of Catch Per Unit of Effort, which would allow the Commission properly implementing several provisions laid down in the Cod plan adopted through R(EC) No 1342/2008.

3. STECF CONCLUSIONS

General comments and conclusions on data availability are followed by ones specific to the Baltic Sea and Annex II, Celtic Sea and Bay of Biscay. Some general comments are made regarding Deep Sea and Western Waters although following review of a completed report these may be further developed.

General

- **STECF notes that a major correction to the ANNEX IIa data from France was required at the end of November 2010. As a consequence the tables and figures in the 2010 SGMOS Part 2 report (https://stecf.jrc.ec.europa.eu/reports/effort) do not contain the same information as the website, where a complete set of the most recent data is available (SGMOS-10-05 web site on: https://stecf.jrc.ec.europa.eu/meetings/2010). However, STECF considered that the overall descriptions of trends are not expected to have changed.**
- **STECF considered it essential to draw clear attention to this issue at the beginning of the report and decided to include a watermark throughout the report to make clear the need to consult the STECF website for the most up to date data.**
- Given that a new updated data call for 2010 has already been issued and evaluation will commence within 2 months, STECF considers efforts should be directed to ensuring the quality of this process rather than further editing of the 2010 SGMOS report.
- STECF notes that the work of SGMOS is to collate and summarise data provided by member states. In this respect the output is dependent on timely submission of accurate material and STECF SGMOS is only able to provide an output which reflects the quality of these data. While every effort is made to accommodate updates and revisions from member states, it is not possible to capture all of these in the finalised reports.
- STECF notes that comprehensive deep sea data has been provided by a number of countries representing a significant new development in the work of SGMOS. STECF also notes, however, that deep sea and western waters effort data from some countries was either not supplied or was incomplete or inaccurate. Shortfalls were most evident in the data from Spain.
- STECF notes that, so far, the data available on deep sea species is mainly restricted to landings information. To gain a true perception of removals from these fisheries, catch data are required.
- STECF notes that it was not possible fully to address some of the TORs because the data call did not request data in a suitable form. Notable examples were i) the Bay of Biscay TORs where the aggregation of effort for regulated gear would depend on a coding by the member state which was not requested in the call and ii) the West of Scotland special requests where information on activity inside and outside the cod recovery zone, and the use of various technical measures is not covered by the call. STECF recommends that prior to making future requests of this type the Commission consults with SGMOS and JRC to ensure that the necessary technical issues can be considered in advance of a call.
- STECF considers that the request to explore the relationships between fishing mortality and effort represents a progressive step inviting some investigative science rather than simply collating data. STECF notes that work is at a preliminary stage and considers that a cautious and thorough evaluation/interpretation is prudent. The range of issues highlighted by the group (including statistical considerations, sources and treatment of the F estimates) merit further investigation and STECF recommends that a future meeting of the SGMOS effort group should contain some participants with particular expertise in this area.
- Given the difficulties encountered, STECF particularly acknowledges the major contribution made by Hans-Joachim Rätz of the JRC in developing, maintaining and uploading data to the various databases. The incorporation of e.g. late submission of new French data, revisions of Belgian data and ongoing data checking and communication with Member States is a demanding task carried out efficiently and in good time for the various SGMOS meetings.
- STECF would like to draw attention to the question of resources being applied to the exercise of compiling and analysing effort and catch data. This involves considerably more work for JRC and

Member States' scientists than the time allocated to WG meetings. STECF notes that some efforts have been directed towards this and an additional JRC staff member attended the SGMOS 10-5 meeting to present a new data checking tool. Notwithstanding this development, STECF reiterates its view expressed in its 34th meeting Report (summer 2010) that a review would be worthwhile of i) time allocated to this work and ii) extent to which some of the detailed material is actually used and iii) scope for improved procedures.

STECF specific comments on Annex II, the Celtic Sea and the Bay of Biscay

- STECF notes that SGMOS has, during its two meetings, updated fleet specific effort and catch (including discard estimates where available) data up to 2009 and provides results based on an aggregation which is consistent with the fleet/gear defined in Annexes IIA, IIB and IIC to Council Reg. 40/2008 and Annex IIA 40/2009. In 2010 French data was supplied from a new database system which is expected to lead to longer term improvements in data quality. However, difficulties with the French data for 2002 and 2009 and an additional late correction mean that a full evaluation of consistency and comparability has not so far been possible. STECF also notes that with the exception of Spanish data supplied for Annex IIB, the limited data supplied by Spain for a number of other areas, especially west of Scotland and Celtic Sea has compromised the ability of the STECF to provide a comprehensive evaluation of the effort regimes in place.
- STECF considers that the simplification of the gear categories in the revised cod plan of Annex IIA has generally facilitated a more straightforward data compilation and evaluation. STECF notes, however, that the new derogations under Articles 11 and 13 of the cod recovery plan complicate the interpretation of effort series in Annex IIA.
- Further effort reductions were estimated from 2008 to 2009 in some areas regarding most of the gears important for catching cod, plaice and sole, particularly trawls and gill netters. In some areas, however, the aggregate change was rather small and in most areas the reductions fell short of those implied by the cod recovery plan schedule of effort cuts for 2009
- CPUE figures were calculated for regulated gears in most areas but the quality of these estimates depend on the available discard information, some of which is sparse. For some areas and gears, only LPUE summaries were provided.
- Owing to the importance of the CPUE information for informing appropriate conversion factors for between gear effort transfers, STECF conducted some additional analysis in line with the specific request from the Commission. Results of these analyses are presented below (additional TOR).
- STECF agrees with the decision of SGMOS that in view of incorrect estimates of discards for the most significant gears in the Irish Sea in 2008 and 2009, that these should be removed from the database. This implies that considerations of the Irish Sea need to be conducted using landings data. STECF recommends that the available discard data for Northern Ireland is examined by SGMOS and incorporated in the database in 2011.
- STECF notes that some of the specific TORs for the West of Scotland could not be addressed (see general points above). Requests for catch information by small meshed gears using square meshed panels were answered and data summaries provided.
- STECF notes that in respect of Review of Annex IIB of Council Reg. 40/2008 in the context of the recovery plan for Southern hake and Nephrops (Regulation 2166/2005) there have been significant improvements in the effort data provided by Spain and Portugal. STECF considers the more comprehensive review made possible by the data improvements provides a good description of the fisheries covered by this regulation
- Estimates of discards provided by Spain were considered to be unrealistic and STECF-SGMOS instead used discard rates submitted to ICES in order to proceed with catch estimates. For future evaluations it is expected that efforts will be made to supply accurate information the STECF effort management evaluation process.
- STECF notes that in respect of Review of Annex IIC of Council Reg. 40/2008 in the context of the sole management in VIIe there have been significant improvements in the provision of data from Member States and the requested fleet specific effort data is now regarded as complete. Discard data, however, is still limited and this continues to impair the estimation of catches.

- STECF notes that there are no indications of effort reductions in terms of kW*days, GT*days or number of vessels regarding the sole sensitive derogations. The data suggest, however, that effort by non-regulated gears, while still relatively high, has declined in the last couple of years.
- STECF re-iterates its earlier comments that the non-regulated (effort in days at sea) otter trawl fleet accounts for about 85% of the effort and contributes significantly to the estimates of landings in weight of cod (91% in 2009), plaice (32%) and sole (about 36%). In the case of cod, non- regulated otter trawl take about 88% of the total
- STECF notes that for the Celtic Sea, notwithstanding the uncertainties about French effort data, overarching conclusions drawn about the Celtic Sea are broadly the same as in previous years
- In summary, i) there appears to have been a reduction in overall effort (predominantly by trawls) in the area. ii) the VIIfg definition of the Celtic Sea accounted for a large part of the cod landings of the area as a whole and that the CPUE of cod in this area is higher than the area as a whole.
- STECF notes that SGMOS was able to provide summaries for two different spatial descriptions. One for the Celtic Sea as a whole and one for ICES areas VIIfg only.
- STECF considers that the process of evaluating whether any extension of the cod recovery plan for the Celtic Sea cod stock should apply to the whole area or would be effective if restricted to VIIfg would benefit from additional information on spawning area or nursery ground in areas outside VIIfg.
- STECF notes that a new review was conducted on the Bay of Biscay. Owing to the specifications of the sole management plan and the fact that the data call did not take this into account, the material available for this area did not permit a subdivision into regulated and non-regulated effort and catches. It is possible this could be addressed in future but would require that the data call be tailored to accommodate the specification and that careful instruction be given to MS administrations.
- STECF notes that the most noticeable feature in the Bay of Biscay is the general rise in fishing effort in recent years, particularly by trawlers. This is unlike almost all other regions where effort has declined

STECF specific comments Part 3 Deep Sea and Western Waters

- STECF notes that part 3 of the STECF SGMOS report, covering Deep Sea and Western Waters of SGMOS has not yet been finalised and that the text requires to be completed. STECF considers that the proposed layout for the report will provide a good basis to begin reviewing these effort regimes. Figures and tables have been completed.

4. STECF RECOMMENDATIONS

Since 2004, STECF has been requested to compile and analyses catch and effort data and it's effort management WGs have built up a substantial and useful series of data bases of catch and effort data, which are widely consulted especially in the context of long-term management plans. Resources for servicing and maintaining these data bases have to date been provided on an ad hoc basis and it is clear that this is not sustainable or desirable. In this context, the STECF again recommends that the Commission establish a more permanent basis for the future resourcing and support of the databases holding the effort and catch information and that priority is given to succession planning to ensure continuity and consistency. There is also a need to ensure consistency between the different databases that are in existence. This could be undertaken in the context of the discussions in regional coordination meetings of the DCF.

STECF SGMOS 10-05 WORKING GROUP REPORT

ON ASSESSMENT OF FISHING EFFORT REGIMES

Edinburgh Scotland 27 SEPTEMBER – 1 OCTOBER 2010

PREPARED IN DRAFT BY SGMOS-10-04: 14-18 JUNE 2010, IPIMAR, LISBON, PORTUGAL

This report does not necessarily reflect the view of the European Commission and in no way anticipates the Commission's future policy in this area

1. SUMMARY OF FINDINGS FOR ANNEX II CELTIC SEA AND BAY OF BISCAY

Review of Annex IIA of Council Reg.s 40/2009 in the context of the cod recovery plan (Regulation 1342/2008):

- STECF-SGMOS and JRC have prepared a series of spreadsheets containing the effort and catch material which is believed to cover the basic requirements of the Commission in answer to most of the TORs. Based on 2010 experiences the group considers that the effort data and landings information are robust and suitable for use in a management context. There are still concerns over the quality and coverage of discard data and the group considers that this should be used with caution.
- STECF-SGMOS notes consistency between the updated fleet specific effort and catch data provided in 2010 and the historic information provided in previous years for an increasing number of Member States. In 2010 the most significant data revision was carried out by France, this led to some very large % changes. However, it is difficult to comment on whether these data are improved compared with previous submissions since a) the 2002 data are known to be erroneous b) the 2009 data seem to be identical to the 2008 data c) a late data update resulted in major changes where the 'DEEP' special condition applied (eg VIa)
- STECF-SGMOS notes that the shift away from the derogation based approach in 40/2008 to the reduced gear categories in 40/2009 has simplified the task and has to lead to more reliable categorisation and reporting.
- STECF-SGMOS estimated further effort reductions from 2008 to 2009 in some areas regarding most of the cod, plaice and sole sensitive derogations, particularly trawl gears and gill netters. In some areas, however, the aggregate change was rather small and in most areas the reductions fell short of those implied by the cod recovery plan schedule of effort cuts for 2009
- STECF-SGMOS continues to observe a high constancy in the catch compositions of the fleets defined in Annex IIA.
- A particular issue arose in the Irish concerning TR2 discard quantities. Estimates of discards for this gear were earlier considered to be reasonable but observations for 2008 and 2009 have been shown to be spurious and bear no relation to ICES estimates. These figures were removed from the database in order to avoid confusion and incorrect inferences being drawn. As a consequence, material on fish quantities refer only to landings.
- During the SGMOS second meeting the group benefited from input from two participating stakeholders who identified mistakes in the spatial effort plots for the Kattegat. These have been corrected.
- STECF-SGMOS addressed a series of short TORs related to the West of Scotland and was able to provide some answers to the requests but was hampered because the data-call had not specified codings which would distinguish areas and gears identified in the TOR.

Review of Annex IIB of Council Reg. 40/2009 in the context of the recovery plan for Southern hake and *Nephrops* (Regulation 2166/2005)

- STECF-SGMOS notes that there were major improvements in the effort data provided by Spain and Portugal and that there were fewer inconsistencies and errors in the effort submissions.
- Estimates of discards provided by Spain were considered to be unrealistic and STECF-SGMOS instead used discard rates submitted to ICES in order to proceed with catch estimates.
- STECF-SGMOS considers that notwithstanding the absence of information for under 10m vessels, the improvements in data provide the most comprehensive picture of the fisheries covered by this Annex and permit a substantive review which has not previously been possible.

Review of Annex IIC of Council Reg. 40/2009 in the context of the recovery of Western Channel sole (proposal COM (2003) 819 final)

- STECF-SGMOS notes that with the exception of discard data there have been significant improvements in the provision of data from Member States and the requested fleet specific effort data is now regarded as complete. The lack of discard data continues to impair the estimation of catches and some inconsistent data aggregations prevents a precise review of the effects of the defined derogations.
- STECF-SGMOS notes that there are no indications of effort reductions in terms of kW*days, GT*days or number of vessels regarding the sole sensitive derogations. The data suggest, however, that effort by unregulated gears, while still relatively high, has declined in the last couple of years.
- STECF-SGMOS notes that the non-regulated (effort in days at sea) otter trawl fleet accounts for about 85% of the effort and contributes significantly to the estimates of landings in weight of cod (91% in 2009), plaice (32%) and sole (about 36%). In the case of cod, unregulated otter trawl take about 88% of the total

Review of Celtic Sea effort and catches in the context of proposals to extend the cod recovery zone to include cod stocks in this area

- Revised data was provided by one of the key players, France, operating in the fisheries of the Celtic Sea region. Unfortunately, Spain did not provide any data in 2010 so it is difficult to fully evaluate the effects of the effort update by France. The coverage was nevertheless considered adequate to provide a basic description ofactivities and catches using the framework of the Annex IIA as applied in other areas.
- Most of the findings and conclusions remain broadly similar to previous years. Overall there has been a reduction in effort in the area.
- STECF SGMOS was able to provide summaries for two different spatial descriptions. One for the Celtic Sea as a whole and one for ICES areas VIIfg only.
- Trawl effort predominated in both areas and has declined in both areas recently.
- Results suggested that the VIIfg definition of the Celtic Sea accounted for a large part of the cod landings of the area as a whole and that the CPUE of cod in this area is higher than the area as a whole.
- STECF SGMOS discussed whether any future extension of the cod recovery plan to apply to the Celtic Sea cod stock should apply to the whole area or would be effective if restricted to the smaller subset area. It was considered that additional information (such information on spawning area or nursery ground) in areas outside VIIfg would be needed to make such a judgement.

Review of Bay of Biscay Sea effort and catches

- A new review was conducted of the Bay of Biscay.
- Owing to the nature of the sole management plan and the fact that the data call did not take this into account, the material available for this area did not permit a subdivision into regulated and unregulated effort and catches. It is possible this could be addressed in future but would require careful instruction to MS administrations.
- STECF-SGMOS notes that the most noticeable feature in the area is the general rise in fishing effort in recent years, particularly by trawlers. This is unlike almost all other regions.

2. INTRODUCTION

The STECF Sub-group on "fishing effort management" held its first annual meeting in IPIMAR Lisbon in Portugal, 14-18 June 2010 (SGMOS-10-04). A progress report from the first two meetings was made available at the July STECF plenary.

In common with previous years a final meeting (SGMOS-10-05) was held, this time in Edinburgh, Scotland, 26 September to 1 October ostensibly to complete the report writing. Owing to some revisions of data and the late supply of data from France and Spain, some data processing was required in the first couple of days of the meeting. Nevertheless, considerable progress has been made compared to previous years.

To provide continuing transparency in the scientific advisory process, the meeting was open to observers (sec. 4), including stakeholder representatives. Two industry representatives participated in each of the meetings.

In order to keep the documentation manageable, separate reports were prepared for the Baltic Sea work and the Deep Sea /Western Waters work. *This report* covers the work associated with Annex II and the cod plan and includes the Celtic Sea and Bay of Biscay reviews.

3. TERMS OF REFERENCE

DG MARE of the EU-Commission provided the STECF Subgroup SGMOS-10-04 and 10-05 with an extensive list of TORs reflecting the extended tasks of the group in 2010.

The overarching request was for: i) an assessment of fishing effort deployed by fisheries and métiers which are currently affected by fishing effort management schemes as defined in Annex II of the TAC and Quota Regulations Regulation and including an assessment of fishing effort deployed by fisheries and métiers which would be affected by the extension of the cod recovery plan to the Celtic Sea and an assessment of effort in the Biscay sole fishery.); ii) an assessment of effort in the Baltic Sea and iii) an assessment of effort in Deep Sea and Western Waters regimes.

The overall list of TORs for SGMOS effort management work in 2010 are listed below. Note that as mentioned above, the Baltic Sea TORS and the Deep Sea /Western Waters TORs are dealt with in separate reports.

STECF SG-MOS 10-04 & 10-05

Evaluation of fishing effort regimes in European waters

From 14.06 to 18.06.2010 and

From 27.09 to 01.10.2010

Draft Terms of Reference on 25.05.2010

Request for

1 – An assessment of fishing effort deployed by fisheries and métiers which are currently affected by fishing effort management schemes defined in the Baltic Sea cod management plan R(EC) No 1098/2007

Terms of Reference:

1. To provide historical series, as far back in time as possible, according to each of the following fishing areas:

Areas covered by the R(EC) No 1098/2007 (Baltic Sea)

(i) ICES division 22 to 24,

(ii) ICES divisions 25 to 28, by distinguishing areas 27 and 28.2

(iii) ICES divisions 29 to 32,

The data should also be broken down by

Member State;

regulated gear types designed in **R(EC) No 1098/2007**;

unregulated gear types catching cod in fishing areas (i), (ii) and (iii);

for the following parameters:

a. Fishing effort, measured in kW.days, in GT.days and

b. Fishing activity measured in days absent from port (according to definitions adopted in R(EC) No 1098/2008) and fishing capacity measured in kW and in number of vessels concerned,

b. Catches (landings and discards provided separately) of cod in the Baltic Sea by weight and by numbers at age,

c. Catches (landings and discards provided separately) of non-cod in the Baltic Sea by species, by weight and by numbers at age

d. Landings Per Unit of Effort (LPUE) and Catches Per Unit Effort (CPUE) of cod in the Baltic Sea (such data shall be issued by Member state, fishing area (i), (ii) and (iii) and fishing gear concerned inn accordance with Art. 3 of **R(EC) No 2187/2005**).

2. If relevant data are available, to comment on the quality of estimations on total catches and discards.

3. To assess the fishing effort and catches (landings and discards) of cod in the Baltic Sea and associated species corresponding to vessels of length overall smaller than 8 metres in each fishery, by gear and by Member State according to sampling plans implemented to estimate these parameters.

4. To assess the correlation between fishing mortality rates and the effort deployed by Member States.

If a good correlation between fishing mortality rates and spend fishing effort is found, the SGMOS is asked to explain or describe it. In case the correlation between the nominal fishing effort and the fishing mortality rates is weak, the SGMOS is asked to describe whether this is due to a wrong descriptor (fe wrong descriptor for fishing capacity) or due to other factors.

5. To assess fishing mortality corresponding to the effort deployed and effort available.

6. To compare the evolution of days allocated to the cod fleet (allowed activity) and really used by that fleet and highlight possible shifts between metiers.

7. To describe, as far as possible, the spatial distribution of the fishing effort deployed in the Baltic Sea, according to data reported in logbooks on the basis of ICES statistical rectangles, with the aim to determine to what extent fishing effort has moved from long distance to coastal areas since the implementation of first fishing effort regime for the first time in such areas.

8. To highlight any unexpected evolutions shown by the data which are not in line with general trend.

2 – An assessment of fishing effort deployed by fisheries and métiers which are currently affected by fishing effort management schemes defined in the Kattegat (Annex IIA to Regulation (EC) No 43/2009)

Terms of Reference:

1. To provide historical series, as far back in time as possible, according to each of the following fishing area:

Kattegat (ICES functional unit IIIaS)

The data should also be broken down by

Member State;

regulated gear types designed in **Annex I** to **R(EC) No 1342/2008** (and by associated special conditions defined the Appendix 6 of the data call) ;

unregulated gear types catching cod ;

for the following parameters:

a. Fishing effort, measured in kW.days, in GT.days, in number of vessels concerned.

b. Catches (landings and discards provided separately) of cod by weight and by numbers at age.

c. Catches (landings and discards provided separately) of non-cod by species, by weight and by numbers at age

d. Landings Per Unit of Effort (LPUE) and Catches Per Unit Effort (CPUE) of cod (such data shall be issued by Member state, fishing area and fishing effort group designed in **Annex I to R(EC) No 1342/2008**).

2. Based on the information compiled under point (1) above, to rank fishing effort groups as designed in **Annex I to R(EC) No 1342/2008**, on the basis of their contribution to catches expressed both in weight and in number of cod.

3. If relevant data are available, to comment on the quality of estimations on total catches and discards.

4. To assess the fishing effort and catches (landings and discards) of cod and associated species corresponding to vessels of length overall smaller than 10 metres in each fishery, by gear (corresponding to regulated and unregulated gear as defined in Annex II framework) and by Member State according to sampling plans implemented to estimate these parameters.

5. To assess the correlation between fishing mortality rates and the effort deployed by Member States.

If a good correlation between fishing mortality rates and spend fishing effort is found, the SGMOS is asked to explain or describe it. In case the correlation between the nominal fishing effort and the fishing mortality rates is weak, the SGMOS is asked to describe whether this is due to a wrong descriptor (fe wrong descriptor for fishing capacity) or due to other factors.

6. To describe, as far as possible, the spatial distribution of the fishing effort deployed in the Kattegat, according to data reported in logbooks on the basis of ICES statistical rectangles, with the aim to determine to what extent fishing effort has moved from long distance to coastal areas since the implementation of first fishing effort regime for the first time in such areas.

7. To highlight any unexpected evolutions shown by the data which are not in line with general trend.

3 – an assessment of fishing effort deployed by fisheries and métiers which are currently affected by fishing effort management schemes defined in the Skagerrak, the North Sea and the Eastern Channel (Annex IIA to Regulation (EC) No 43/2009)

Terms of Reference:

1. To provide historical series, as far back in time as possible, according to each of the following fishing areas:

(i) Skagerrak (ICES functional Unit IIIaN),

(ii) North Sea (EC waters of ICES sub-area IIa and ICES sub-area IV),

(iii) Eastern channel (ICES division VIId)

The data should also be broken down by

Member State;

regulated gear types designed in **Annex I** to **R(EC) No 1342/2008** (and by associated special conditions defined in the Appendix 6 of the data call) ;

unregulated gear types catching cod, sole and plaice in fishing areas (i), (ii) and (iii) ;

for the following parameters:

a. Fishing effort, measured in kW.days, in GT.days, in number of vessels concerned and days at sea for the sole and plaice fishery.

b. Catches (landings and discards provided separately) of cod, sole and plaice by weight and by numbers at age.

c. Catches (landings and discards provided separately) of non-cod , non-sole and non-plaice by species, by weight and by numbers at age.

d. Landings Per Unit of Effort (LPUE) and Catches Per Unit Effort (CPUE) of cod, sole and plaice (such data shall be issued by Member state, fishing area and fishing effort group designed in **Annex I to R(EC) No 1342/2008**).

2. Based on the information compiled under point (1) above, to rank fishing effort groups as designed in **Annex I to R(EC) No 1342/2008**, on the basis of their contribution to catches expressed both in weight and in number of cod, sole and plaice.

3. If relevant data are available, to comment on the quality of estimations on total catches and discards.

4. To assess the fishing effort and catches (landings and discards) of cod, sole and plaice and associated species corresponding to vessels of length overall smaller than 10 metres in each fishery, by gear (corresponding to regulated and unregulated gear as defined in Annex II framework) and by Member State according to sampling plans implemented to estimate these parameters.

5. To assess the correlation between fishing mortality rates and the effort deployed by Member States.

If a good correlation between fishing mortality rates and spend fishing effort is found, the SGMOS is asked to explain or describe it.

In case the correlation between the nominal fishing effort and the fishing mortality rates is weak, the SGMOS is asked to describe whether this is due to a wrong descriptor (fe wrong descriptor for fishing capacity) or due to other factors.

6. To describe, as far as possible, the spatial distribution of the fishing effort deployed in the the Skagerrak, the North Sea and the Eastern Channel, according to data reported in logbooks on the basis of ICES statistical rectangles, with the aim to determine to what extent fishing effort has moved from long distance to coastal areas since the implementation of first fishing effort regime for the first time in such areas.

7. To highlight any unexpected evolutions shown by the data which are not in line with general trend.

4 – An assessment of fishing effort deployed by fisheries and métiers which are currently affected by fishing effort management schemes defined in the West of Scotland (Annex II A to Regulation (EC) No 43/2009)

Terms of Reference:

1. To provide historical series, as far back in time as possible, according to each of the following fishing area:

West of Scotland (ICES division VIa and EC waters of Vb)

The data should also be broken down by

Member State;

regulated gear types designed in **Annex I to R(EC) No 1342/2008** (and by associated special conditions defined in Appendix 6 to the data call as far as relevant) ;

unregulated gear types catching cod

for the following parameters:

a. Fishing effort, measured in kW.days, in GT.days and in number of vessels concerned

b. Catches (landings and discards provided separately) of cod by weight and by numbers at age

c. Catches (landings and discards provided separately) of non-cod by species, by weight and by numbers at age.

d. Landings Per Unit of Effort (LPUE) and Catches Per Unit Effort (CPUE) of cod (such data shall be issued by Member state, fishing area and fishing effort group designed in **Annex I to R(EC) No 1342/2008**).

2. Based on the information compiled under point (1) above, to rank fishing effort groups as designed in **Annex I to R(EC) No 1342/2008**, on the basis of their contribution to catches expressed both in weight and in number of cod.

3. If relevant data are available, to comment on the quality of estimations on total catches and discards.

4. To assess the fishing effort and catches (landings and discards) of cod and associated species corresponding to vessels of length overall smaller than 10 metres in each fishery, by gear (corresponding to regulated and unregulated gear as defined in Annex II framework) and by Member State according to sampling plans implemented to estimate these parameters.

5. To assess the correlation between fishing mortality rates and the effort deployed by Member States.

If a good correlation between fishing mortality rates and spend fishing effort is found, the SGMOS is asked to explain or describe it. In case the correlation between the nominal fishing effort and the fishing mortality rates is weak, the SGMOS is asked to describe whether this is due to a wrong descriptor (fe wrong descriptor for fishing capacity) or due to other factors.

6. To describe, as far as possible, the spatial distribution of the fishing effort deployed in the West of Scotland, according to data reported in logbooks on the basis of ICES statistical rectangles, with the aim to determine to what extent fishing effort has moved from long distance to coastal areas since the implementation of first fishing effort regime for the first time in such areas.

7. To highlight any unexpected evolutions shown by the data which are not in line with general trend.

8. When providing and explaining data in accordance with point (1), the following **specific request** should be answered as far as possible as well:

Concerning ICES division VIa alone, please provide catches, discards and effort expended by the following gears in accordance with Annex III paragraphs 6.5 and 6.6 of Reg 43/2009:

a) Vessels under 15m, fishing with min. 110mm gear and incorporating a square-mesh panel as described in Appendix 5 to Annex III;

b) Vessels over 15m, fishing with min. 120mm gear and incorporating a square-mesh panel as described in Appendix 5 to Annex III;

c) Vessels over 15m, fishing with min. 120mm gear and without a square-mesh panel;

d) Vessels fishing with min. 80mm gear and incorporating a sorting grid according to points b,c,d,e of Appendix 2 to Annex III;

e) Vessels fishing with min. 80mm gear and incorporating a square-mesh panel as described in Appendix 5 to Annex III.

5 – An assessment of fishing effort deployed by fisheries and métiers which are currently affected by fishing effort management schemes defined in the Irish Sea (Annex IIA to Regulation (EC) No 43/2009)

Terms of Reference:

1. To provide historical series, as far back in time as possible, according to each of the following fishing area:

Irish Sea (ICES division VIIa)

The data should also be broken down by

Member State;

regulated gear types designed in **Annex I** to **R(EC) No 1342/2008** (and by associated special conditions defined in Appendix 6 to the data call as far as relevant) ;

unregulated gear types catching cod ;

for the following parameters:

a. Fishing effort, measured in kW.days, in GT.days and in number of vessels concerned

b. Catches (landings and discards provided separately) of cod, by weight and by numbers at age.

c. Catches (landings and discards provided separately) of non-cod, by species, by weight and by numbers at age

d. Landings Per Unit of Effort (LPUE) and Catches Per Unit Effort (CPUE) of cod, sole and plaice (such data shall be issued by Member state, fishing area and fishing effort group designed in **Annex I to R(EC) No 1342/2008**).

2. Based on the information compiled under point (1) above, to rank fishing effort groups as designed in **Annex I to R(EC) No 1342/2008**, on the basis of their contribution to catches expressed both in weight and in number of cod.

3. If relevant data are available, to comment on the quality of estimations on total catches and discards.

4. To assess the fishing effort and catches (landings and discards) of cod and associated species corresponding to vessels of length overall smaller than 10 metres in each fishery, by gear (corresponding to regulated and unregulated gear as defined in Annex II framework) and by Member State according to sampling plans implemented to estimate these parameters.

5. To assess the correlation between fishing mortality rates and the effort deployed by Member States.

If a good correlation between fishing mortality rates and spend fishing effort is found, the SGMOS is asked to explain or describe it.

In case the correlation between the nominal fishing effort and the fishing mortality rates is weak, the SGMOS is asked to describe whether this is due to a wrong descriptor (fe wrong descriptor for fishing capacity) or due to other factors.

6. To describe, as far as possible, the spatial distribution of the fishing effort deployed in the Irish Sea, according to data reported in logbooks on the basis of ICES statistical rectangles, with the aim to determine to what extent fishing effort has moved from long distance to coastal areas since the implementation of first fishing effort regime for the first time in such areas.

7. To highlight any unexpected evolutions shown by the data which are not in line with general trend.

6 – An assessment of fishing effort deployed by fisheries and métiers which will be affected by the extension of the cod recovery plan to the Celtic Sea

Terms of Reference:

1. To provide historical series, as far back in time as possible, according to each of the following fishing area:

(i) Celtic Sea (total of ICES divisions VIIb, VIIc, VIIe, VIIf, VIIg, VIIh, VIIj and VIIk) and

(ii) combined area Bristol Channel/South-East Ireland (total of the subset of ICES divisions VIIf and VIIg)

The data should also be broken down by

Member State ;

regulated gear types designed in **Annex I** to **R(EC) No 1342/2008** ;

unregulated gear types catching cod

for the following parameters:

a. Fishing effort, measured in kW.days, in GT.days and in number of vessels concerned

b. Catches (landings and discards provided separately) of cod by weight and by numbers at age.

c. Catches (landings and discards provided separately) of non-cod by species, by weight and by numbers at age.

d. Landings Per Unit of Effort (LPUE) and Catches Per Unit Effort (CPUE) of cod (such data shall be issued by Member state and fishing effort groups as designed in **Annex I to R(EC) No 1342/2008**).

2. When providing and explaining data in accordance with point (1), the following **specific question** should be answered as well:

For VIIf+VIIg only, identify the **main species** (volume and percentage) caught per gear category, and related trends in recent years. Specify when this calculation has taken account of discards as well.

3. If relevant data are available, to comment on the quality of estimations on total catches and discards.

4. To assess the fishing effort and catches (landings and discards) of cod and associated species corresponding to vessels of length overall smaller than 10 metres in each fishery, by gear (corresponding to regulated and unregulated gear as defined in Annex II framework) and by Member State according to sampling plans implemented to estimate these parameters.

5. To assess the correlation between fishing mortality rates and the effort deployed by Member States.

If a good correlation between fishing mortality rates and spend fishing effort is found, the SGMOS is asked to explain or describe it. In case the correlation between the nominal fishing effort and the fishing mortality rates is weak, the SGMOS is asked to describe whether this is due to a wrong descriptor (fe wrong descriptor for fishing capacity) or due to other factors.

6. To highlight any unexpected evolutions shown by the data which are not in line with general trend.

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7 – Assessment of fishing effort deployed by vessels under the Southern hake and Norway lobster plan (Council Regulation (EC) No 2166/2005) operating in the Atlantic waters of the Iberian Peninsula as specified in Annex IIB of Council Regulation (EC) No 43/2009

Terms of Reference:

1. The STECF is requested to compile, validate, analyse and assess the following historical data on fishing effort and catches in relation to vessels under the Southern hake and Norway lobster plan (Regulation (EC) 2166/2005):

- **details by Member State on both effort (2000-2008) deployed and catches (2003-2008) made by all fishing vessels, included those with less than 10 meters, in each fishery, broken down by age, gear type and mesh size,**according to each of the following fishing areas:

(i) Southern hake stocks which inhabits ICES divisions VIIIc and IXa; and

(ii) Norway lobster stock which inhabits ICES division VIIIc;

(iii) Norway lobsterstock which inhabits ICES division IXa:

The data should be broken down and assessed by:

- Member State;
- regulated gear types, area as laid down in **Annex IIB** of Council **Regulation (EC) No 43/2009** and associated special conditions as laid down in Appendix 6 to the data call;unregulated gear types catching hake and Norway lobster;

for the following parameters:

a. fishing effort measured in kW.days, in GT.days and in number of vessels concerned;

b. catches (landings and discards provided separately) of hake and Norway lobster by weight and by numbers at age;

c. catches (landings and discards provided separately) of species other than hake and Norway lobster in areas covered by Annex IIB mentioned above (a particular attention should be paid to Anglerfish catches), by species, by weight and by numbers at age;

d. landings Per Unit of Effort (LPUE) and Catches Per Unit Effort (CPUE) of hake, Norway lobster and Anglerfish in areas covered by Annex IIB (such data shall be issued by Member state, fishing gear and special conditions listed in **Annex IIB of Council Regulation (EC) No 43/2009**);

In assessing the data described above, particular attention should be paid to:

- the quality of estimates of total catches and discards;

- both the fishing effort and catches including landings and discards of hake, Norway lobster, anglerfish, and associated species in relation to vessels of overall length smaller than 10 metres in each fishery, by gear (regulated and unregulated gears) and by Member State. The representativeness of data originated from sampling schemes should also be assessed.

- to the description, as far as possible, of the spatial distribution of the fishing effort deployed in the Atlantic waters of the Iberian Peninsula according to data reported in logbooks on the basis of ICES statistical rectangles with the aim to determine to what extent fishing effort has moved from long distance to coastal areas since the implementation of the fishing effort regime.

2. In the context of the evaluation of the current Southern hake and Norway lobster recovery plan (Council Regulation (EC) No 2166/2005) and on the basis of the data provided, the STECF is requested to assess the fishing effort regime drawing conclusions on the application of effort limitations against the objectives of the plan and advising on possible adjustments when appropriate.

3. To compare the evaluation of days allocated to the vessels carrying regulated gears (allowed activity) and really used by those vessels.

4. To assess the correlation between fishing mortality rates and the effort deployed by Member States.

If a good correlation between fishing mortality rates and spend fishing effort is found, the SGMOS is asked to explain or describe it. In case the correlation between the nominal fishing effort and the fishing mortality rates is weak, the SGMOS is asked to describe whether this is due to a wrong descriptor (fe wrong descriptor for fishing capacity) or due to other factors.

5. To highlight any unexpected evolutions shown by the data which are not in line with general trend.

8 – An assessment of fishing effort deployed by fisheries and métiers which are currently affected by fishing effort management schemes defined in the Western Channel (Annex IIC to Regulation (EC) No 43/2009)

Terms of Reference:

1. To provide historical series, as far back in time as possible, according to each of the following fishing area:

Western Channel (ICES division VIIe)

The data should also be broken down by

Member State ;

regulated gear types designed in **Annex IIC** to **R(EC) No 43/2009** (and by associated special conditions defined therein as far as relevant) ;

unregulated gear types catching sole ;

the following parameters:

a. Fishing effort, measured in kW.days, in GT.days and in number of vessels concerned

b. Catches (landings and discards provided separately) of sole by weight and by numbers at age.

c. Catches (landings and discards provided separately) of non-sole by species, by weight and by numbers at age

d. Landings Per Unit of Effort (LPUE) and Catches Per Unit Effort (CPUE) of sole (such data shall be issued by Member state and fishing gear listed in **Annex IIC to R(EC) No 43/2009**).

2. If relevant data are available, to comment on the quality of estimations on total catches and discards.

3. To assess the fishing effort and catches (landings and discards) of sole and associated species corresponding to vessels of length overall smaller than 10 metres in each fishery, by gear (corresponding to regulated and unregulated gear as defined in Annex II framework) and by Member State according to sampling plans implemented to estimate these parameters.

4. To assess the correlation between fishing mortality rates and the effort deployed by Member States.

If a good correlation between fishing mortality rates and spend fishing effort is found, the SGMOS is asked to explain or describe it. In case the correlation between the nominal fishing effort and the fishing mortality rates is weak, the SGMOS is asked to describe whether this is due to a wrong descriptor (fe wrong descriptor for fishing capacity) or due to other factors.

5. To describe, as far as possible, the spatial distribution of the fishing effort deployed in the Western Channel, according to data reported in logbooks on the basis of ICES statistical rectangles,

with the aim to determine to what extent fishing effort has moved from long distance to coastal areas since the implementation of first fishing effort regime for the first time in such areas.

6. To compare the evaluation of days allocated to the vessels carrying regulated gears (allowed activity) and really used by those vessels.

7. To highlight any unexpected evolutions shown by the data which are not in line with general trend.

9 - Assessment of fishing effort and evaluation of management measures to be assessed in 2009 (Deep sea and Western Waters effort regime)

Terms of Reference:

1. To provide historical series, as far back in time as possible, according to each of the following fishing areas:

(i) ICES area I (EU waters; non EU waters), only linked to Deep Sea species

(ii) ICES area II (EU waters; non EU waters), only linked to Deep Sea species

(iii) ICES area III (EU waters; non EU waters), only linked to Deep Sea species

(iv) ICES area IV (EU waters; non EU waters), only linked to Deep Sea species

(v) ICES area V (EU waters; non EU waters)

(vi) ICES area VI (EU waters; non EU waters)

(vii) ICES area VII excluding VIId (EU waters; non EU waters)

(viii) ICES division VIId

(ix) the Biologically Sensitive Area as defined in Article 6 of Reg (EC) No 1954/2003

(x) ICES area VIII (EU waters; non EU waters)

(xi) ICES area IX (EU waters; non EU waters)

(xii) ICES area X (EU waters; non EU waters)

(xiii) ICES area XII (EU waters; non EU waters), only linked to Deep Sea species

(xiv) ICES area XIV (EU waters; non EU waters), only linked to Deep Sea species

(xv) CECAF area 34.1.1 (EU waters; non EU waters)

(xvi) CECAF area 34.1.2 (EU waters; non EU waters)

(xvii) CECAF area 34.1.3 (EU waters; non EU waters)

(xviii) CECAF area 34.2 (EU waters; non EU waters)

The data should also be broken down by

- Member State ;

- The following gear types:

- regulated gear types
  - Beam trawls
  - Bottom trawls & demersal seines
  - dredges
  - drifting longlines or set longlines (bottom)
  - driftnets or set gillnets
  - trammel nets
  - pots & traps
- Unregulated gear types:
  - Pelagic trawls and pelagic seines;
  - longlines (surface)

for the following parameters:

a. Fishing effort, measured in kW.days, in GT.days and in number of vessels concerned

b. Catches (landings and discards provided separately) by weight of

- 5 most important (in weight landed) demersal species excluding scallops, edible crab, spider crab,
- Scallops
- Spider crab and edible crab
- 5 most important (in weight landed) Deep-sea species (according to Annex I and II of Reg 2347/2002), only related to fisheries which have been identified with special condition DEEP
- 4 most important (in weight landed) pelagic species, plus always tuna-like species (SKJ,ALB,YFT,BET,SWO).

c. Landings Per Unit of Effort (LPUE) and Catches Per Unit Effort (CPUE) by

Member State and gear, given by total catches of the gear divided by kW-days and GT-days.

2. If relevant data are available, to comment on the quality of estimations on total catches and discards.

3. When providing and explaining data in accordance with point (1), the following **specific question** should be answered as well:

Assess possible reasons for excluding gears directed towards pelagic fisheries from the regime. In particular: Is effort on pelagic fisheries in those areas less correlated to fishing mortalities than effort on demersal fisheries?

4. To identify recent effort trends in pelagic fisheries where possible, in particular in areas XI, X and CECAF areas.

5. To highlight any unexpected evolutions shown by the data which are not in line with general trend.

10 – An assessment of fishing effort deployed by fisheries and métiers which are currently affected by the multiannual plan for the sustainable exploitation of the stock of common sole in the Bay of Biscay (R(EC) No 388/2006)

Terms of Reference:

1. To provide historical series, as far back in time as possible, according to each of the following fishing areas:

- ICES division VIIIa, and
- ICES division VIIIb

The data should also be broken down by

a. Member State;
b. type of gear (as laid down in Annex IV of Commission Decision 2008/949/CE) for regulated vessels (as laid down in article 5 of R(EC) No 388/2006)

c. type of gear (as laid down in Annex IV of Commission Decision 2008/949/CE) for unregulated vessels (as laid down in article 5 of R(EC) No 388/2006)

for the following parameters:

a. Fishing effort, measured in kW.days, in GT.days and in number of vessels concerned

b. Fishing capacity in GT

c. Catches (landings and discards provided separately) of common sole (Solea solea) by weight and by numbers at age.

d. Catches (landings and discards provided separately) of species other than common sole, by weight and by numbers at age

2. If relevant data are available, to comment on the quality of estimations on total catches and discards.

3. To assess the fishing effort and catches (landings and discards) of common sole and associated species corresponding to vessels of length overall smaller than 10 metres in each fishery, by gear and by Member State according to sampling plans implemented to estimate these parameters.

4. To assess the correlation between fishing mortality rates and the effort deployed by Member States.

If a good correlation between fishing mortality rates and spend fishing effort is found, the SGMOS is asked to explain or describe it. In case the correlation between the nominal fishing effort and the fishing mortality rates is weak, the SGMOS is asked to describe whether this is due to a wrong descriptor (fe wrong descriptor for fishing capacity) or due to other factors.

5. To describe, as far as possible, the spatial distribution of the fishing effort deployed in the Bay of Biscay, according to data reported in logbooks on the basis of ICES statistical rectangles, with the aim to determine the spatial distribution of fishing effort and its development among the time period.

6. To highlight any unexpected evolutions shown by the data which are not in line with general trend.

4. PARTICIPANTS

Participants of the 2 meetings are grouped by STECF members, invited experts, JRC experts, stakeholder, and EU-Commission representatives and are listed in Appendix 1.

For the second meeting, regular SGMOS participation was augmented by 2 experts in Deep Sea biology who made valuable contributions in areas beyond the expertise normally present.

In 2007, STECF and its subgroups adopted a new working style with stakeholder involvement as observers to improve transparency in scientific evaluations. Observers were invited to comment on the TORs and related analyses and results. The stakeholder involvement was in accordance with the protocol for STECF meetings observers, Brussels, 20 September 2006. Two stakeholders attended both the June and September meetings in 2010. Experience during the 2010 meetings again showed that representatives of stakeholder organisations were very interested in the evaluation of the basic information regarding the trends in fleet specific information and specific data deficiencies. Contributions took the form of constructive questions, clarifying comments mainly focussed on recent experience of fishing activity by different fleets and queries which led to the correction of software.

5. REPORT NOTATIONS

The compilation of effort data as described in this report represents a continuation of a process which was initiated in association with the establishment of recovery plans for various European cod and hake stocks. The notation and categorisation of effort used has reflected that used in the relevant technical regulations. The most recent revision of the cod recovery plan and the associated effort regime are described in Regulation 1342/2008.

Under the revised 'cod plan' the following gear groupings are set out in Annex I of the Regulation together with areas in which they apply. Throughout the report reference is made to gears such as TR1, TR2 etc. Under the revised scheme Member States are allocated 'effort pots' in KW*days for each category which can then be managed nationally. EU allocated 'days at sea' per vessel are no longer applicable. The following summary of gear and area codes that apply in the current cod plan is taken from Annex 1 of Regulation 1342/2008.

ANNEX I
Effort groups are defined by one of the gear groupings set out in point 1 and one of the geographical areas set out in point 2.

1. Gear groupings

(a) Bottom trawls and seines (OTB, OTT, PTB, SDN, SSC, SPR) of mesh:
TR1 equal to or larger than 100 mm,
TR2 equal to or larger than 70 mm and less than 100 mm,
TR3 equal to or larger than 16 mm and less than 32 mm;

(b) Beam trawls (TBB) of mesh:
BT1 equal to or larger than 120 mm
BT2 equal to or larger than 80 mm and less than 120 mm;

(c) Gill nets, entangling nets (GN);

(d) Trammel nets (GT);

(e) Longlines (LL).

2. Groupings of geographical areas:
For the purposes of this Annex, the following geographical groupings shall apply:
(a) Kattegat;
(b) (i) Skagerrak; (ii) that part of ICES zone IIIa not covered by the Skagerrak and the Kattegat; ICES zone IV and EC waters of ICES zone IIa; (iii) ICES zone VIId;
(c) ICES zone VIIa;

(d) ICES zone VIa.

This categorisation is relatively simple when compared to that of the previous version of the cod recovery plan (see e.g. ref to 2009 report]), and the number of 'special conditions' under which vessels have differing allocations of effort is relatively restricted. The current cod recovery plan makes allowance for vessels which can demonstrate a track record of having caught less than 1,5% cod to be excluded from the effort regime (Regulation 1342/2008, Article 11, para 2b). There is also scope for groups of vessels to be allocated additional effort if they participate in discard reduction or cod avoidance schemes leading to equivalent or greater reductions in cod mortality than the corresponding effort restriction (Regulation 1342/2008, Article 13, para 2c). These conditions are represented in the database as follows:

Condition	Code
Effort deployed by those boats granted the <1.5% derogation excluding them from the effort regime	CPart11
Effort deployed by vessels operating in Member State schemes under Article 13	CPart13

Notation devised for effort categories specified under Annexes IIB and IIC of Regulation (EC) No. 40/2008 remains the same as in previous reports. Under Annex IIB gear groups are defined under point 3 and special conditions under point 7.2. In 2007 gear group definitions were made for bottom trawls, gill nets and bottom long lines. These groupings were merged in the 2008 legislation. The working group considered maintaining the categories as defined in 2007 was important in terms of maximising the clarity of information from results. Therefore gear groupings have been kept consistent with those from the Annex IIB in 2007 (found in regulation (EC) No. 41/2007). Table 5.1 links notation with gear group and special conditions. So, for example, a vessel using a gill net of mesh size ≥ 60mm and conforming to the hake catch composition rules would belong to derogation "3.b.i IIB72a".

Under Annex IIC gear groups are defined under point 3 and special conditions under point 7. Table 5.2 links notation with gear group and special conditions. So, for example, a vessel using a static net of mesh size less than 220mm belongs to derogation "3.b".

Table. 5.1 Gear group and special conditions of Annex IIB, Reg. (EC) No. 40/2008

Derogation			Mesh size range		Special Condition	
Gear group Point 3 [1]	Special condition Point 7 [2]	Gear	mesh size mm From	mesh size To mm	Hake landings < 5 tonnes in each of the years 2001, 2002 and 2003	Nephrops landings < 2.5 tonnes in each of the years 2001, 2002 and 2003
3.a 3.b 3.c		TD G LL	32 60 -	inf inf -		
3.a.i	7.2.(a) & 7.2.(b)	TD	32	inf	x	x
3.b.i	7.2.(a) & 7.2.(b)	G	60	inf	x	x
3.c	7.2.(a) & 7.2.(b)	LL	-	-	x	x

TD = Trawl or Danish seine or 'similar gears' (dredges are included under similar gears)
G = Gill net
LL = Long lines
1. Gear groupings correspond to Annex IIB found in Reg (EC) No. 41/2007.
Special conditions 7.2(a) and 7.2(b) can not be complied with independently.

Table. 5.2 Gear group and special conditions of Annex IIC, Reg. (EC) No. 40/2008. Note that no special conditions are currently in operation under Annex IIC.

Derogation			Mesh size range		Special Condition
Gear group Point 3	Special condition Point 7	Gear	mesh size mm From	mesh size To mm	
3.a		BT	80	inf	none
3.b		GE & TR	0	219	none

BT = Beam Trawl
GE = Gill net or entangling net
TR = Trammel net

5.1. Data call

On 27th April 2010 the Commission DG Mare invited the relevant institutes to electronically submit fleet specific catch and effort data no later than 25th May 2010. A corrigendum was issued on 12th May 2010. The data call and its corrigendum are fully documented on the Joint Research Centre (JRC) fisheries data collection web site: https://datacollection.jrc.ec.europa.eu/home

For the cod recovery plan stocks, the call was based on the new cod recovery plan Annex and on the previous effort Annexes for other stocks.

STECF SGRST notes that the gear categories used in the current cod recovery plan are not aligned with the definitions used in the Commission's Data Collection Framework. Improved correspondence between the two sets of definitions should help improve the quality of the data available to STECF SGRST.

5.2. Data policy, formats and availability

Originally, the catch and effort data base structures used by STECF-SGRST were developed by the ICES Study Group on the Development of Fishery-based Forecasts (ICES CM 2004/ACFM:11, 41 pp.) with few amendments required for the review of fishery regulations. There have been numerous changes to the original database and the way in which data are stored and accessed in order to reflect changes to some of the effort regimes and to accommodate deep-water issues.

5.2.1. Data policy

Experts reported about national data policies of the national fleet specific landings, discards and effort data in support of a continued use of the data by STECF-SGRST but with the required permission for any use by other scientific or non-scientific groups. This implies that national experts need to be contacted for their consent before granting access to the data. However, Denmark and Portugal reserves the right of the deletion of the national data on request.

JRC requests that it is informed about applications of data access and their notifications.

5.2.2. Nominal fleet specific effort data 2000-2009

The fleet aggregation according to the derogations (gear group, mesh size and management area) defined in Annexes IIA-C or aggregation according to the revised cod plan is within the competence of the Member States' institutes. While every attempt is made to encourage a consistent approach, some differences between countries due to availability of essential information, different interpretations and/or different expertise to manage the extensive databases is known to occur. A number of Member States invested additional time in improving their data submissions and the overall quality is believed to have improved

STECF-SGMOS notes that assignment of derogations is based on best expert knowledge and data availability, which also reflects cooperation with the national control and enforcement institutions. The assignment of 'cod plan' gears is more straightforward and going forward the quality of data should improve further. The availability of the fleet specific effort data requested is summarised in the following quality control notes (prepared by JRC) and Table 5.2.2.1.

Table 5.2.2.1 Overview on 2000-2009 effort data reports provided by EU member states with and without special conditions laid down in Annexes IIA-C of Council Regulation 40/2008 and 43/2009

Country	data submission	submitted	reviewed	updated	reviewed	ready for upload	uploaded
BEL	DCF web site	27-Aug	30-Aug			30-Aug	13-Sep
DEN	DCF web site	28-May	02-Jun	03-Jun		03-Jun	11-Jun
EST	DCF web site	24-May	28-May			04-Jun	11-Jun
FIN	DCF web site	26-May	28-May	03-Jun	04-Jun		
FRA	French Data server	14-Sep	15-Sep			15-Sep	16-Sep
GER	DCF web site	28-May	03-Jun			03-Jun	11-Jun
IRL	DCF web site	28-May	04-Jun	06-Jun	07-Jun	07-Jun	11-Jun
LAT	DCF web site	28-May	04-Jun	01-Jul	01-Jul	01-Jul	05-Jul
LIT	DCF web site	14-Jun	14-Jun			14-Jun	15-Jun
NED	email	26-May	07-Jun			07-Jun	11-Jun
POL	DCF web site	28-May	02-Jun	14-Jun	14-Jun	14-Jun	15-Jun
POR	DCF web site	28-May	08-Jun	11-Jun	14-Jun	14-Jun	15-Jun
SPN	email	31-May	09-Jun			03-Aug	03-Aug
SWE	email	28-May	08-Jun	05-Jul	05-Jul	05-Jul	06-Jul
UK SCO	email	28-May	08-Jun	09-Jun	09-Jun	09-Jun	11-Jun
UK	DCF web site	14-Jun	14-Jun			14-Jun	15-Jun

List of data deficiencies, inconsistencies and manipulations observed by JRC while uploading data base B of nominal effort

Belgium:

There are 315 records with wrong area code (7e, 7f, 7g, 7h, 8a, 8b) for specific condition Cpother. Specific condition should be 'none'. There are 7 records with area code 7j, whereas the acceptable codes are 7j EU or 7j RFMO. There are 67 records with gear code OTTER, none mesh size code and specific condition Cpother. Mesh size should be defined. There are 82 records with wrong mesh code for gear BEAM and specific condition Cpother. The acceptable mesh codes are 80-89, 90-99, 100-119, >=120. There are 2 records with gear code DEM_SEINE, none mesh size code and specific condition Cpother. Mesh size should be defined. There are 13 records with gear code DREDGE and specific condition Cpother. This gear isn't regulated by this specific condition. There is 1 record with gear code POTS and specific condition Cpother. This gear isn't regulated by this specific condition. All data revisions confirmed.

Danish data base B Effort revised:

All years 2000-2009 reported. No special conditions other than DEEP are specified. One record of special condition DEEP in the Baltic will be ignored. Data are considered ready for upload.

Estonia data base B Effort:

Only 2009 data submitted. Given that the area classifications and the vessel size classifications in the Baltic Sea have changed compared to last year's data call, the total time series requested 2003-2009. Gill 110-149 in the Baltic was replaced with Gill 110-156 (6 records). Pel_trawls bacoma 100-119 were replace with >=105 (2 records). Considered ready for upload.

Finish data base B Effort first revision:

The effort figures are not specific by area, gear, quarter, mesh_size ranges and special conditions. Vessel length categories are inconsistent. Few discard figures are reported but no additional biological. Allowed activity is not submitted. Data not uploaded as generally inconsistent with the required formats.

France:

Data delivered are for 2000-2008. 2009 data are announced to be delivered by 27 September. Vessel length codes “015m” were converted to “o15m” and “010t15m” to “o10t15m”. Area codes “8DEU” and “8EEU” were corrected to “8D EU” and “8E EU”. Small spaces in other codes were corrected also. There are 496 records with small_beam code, were replaced with BEAM. There are 191 records with BSA and DEEP (no action needed). There are 376 records with area, 132 records with 7 area code, 2 records with 3a, there is 1 record with 3 and there is 1 record with area 3c (all remain unclear). There are 333 records with mesh size but none gear, were replaced with Mesh size “none”. There are 53 records with Trammel and Specific Condition IIA83g and mesh size code above 110 or none, were replaced with “none”. There are 17 records with wrong mesh size code >16, were replaced with “none”. There are 2 records with wrong mesh size code 60-69 for gear OTTER, were replaced with “55-69”.

German data base B Effort:

All years 2000 to 2009 for the Baltic Sea, all other areas only 2009 submitted. Vessel length codifications o15, o40 and o12t18 were corrected to o15m, o40m and o12t18m. Gear code MIS is replaced with none (251 records), for these records the mesh size codes were set to none. 4 records with area 12 were replaced to area 12 RFMO (wrongly coded by the data call). 3 records of pel_trawl 32-54 in 2009 without an area will be ignored in the analyses. Considered ready for upload.

Irish data base B Effort:

All years 2000 to 2009 submitted. Allowed activity, fishing activity and fishing capacity not provided. Specon CPOTHER was replaced with none. Considered ready for upload if no revision provided.

Latvian data base B Effort:

Years 2003 to 2009 submitted, not for 2000-2002. Considered ready for upload.

Lithuanian data base B Effort:

Only year 2009 submitted. Only cod catches are reported. One record with longline and mesh size range 110-156 was corrected to none. Considered ready for upload if no revision provided.

Netherlands data base B Effort:

Only year 2009 complete and 2 records in 2007 and 4 in 2008 on individual boats fishing on brown shrimp (were deleted). No special conditions were defined. No allowed activity, fishing activity and fishing capacity reported. All records area 3as were corrected to 3an. Considered ready for upload if no revision provided.

Polish data base B Effort:

No data submitted for 2000-2003, only years 2004-2009. 1 record with empty gear was corrected to none and 1 record with no area will be ignored in the analyses. Considered ready for upload.

Portuguese data base B Effort

All years 2000 to 2009 reported. 40 records with gear PGP were replace with none. 6 records with area 12 were replaced to area 12 RFMO (wrongly coded by the data call). 8 records with area 6a RFMO were updated to 6a. 1 record with area 34.1.1 RFMO is updated to 34.1.1 COAST. 115 records of longline gears with mesh size ranges other than none were updated to mesh size range none. Effort figures need a close check to avoid errors due to country settings on decimals.

Scottish data base B Effort

Only date for 2009 submitted. No entries for ALLOWED_ACTIVITY, FISHING_ACTIVITY and FISHING_CAPACITY. There are 8 records with the combination SPECON and SGDFF_AREA, namely 'DEEP' and 'BSA'. These records will be ignored as DEEP records are already duplicated for all other areas than BSA. There are 7 records with entry 'other' for SGDF_AREA. These records will be ignored in the analyses. Specon CPOTHER was replaced with none. Considered ready for upload.

Spanish data base B effort

Years 2002 to 2009 submitted, but not 2000-2001. 2002-2009 data supplied for 8c and 9a data for Annex IIB and Deep Species. 2009 data for DEEP SPECIES were also submitted for other areas data. Vessel length categories, allowed activity, fishing activity and fishing capacity were not identified for 2002-2008 8c and 9a data. No EU/RFMO/COAST identification for ICES Subarea 10 and Divisions 7j, 7k, 8d, 8e, 8b, 14b and CECAF areas 34.1.2 and 34.2.0. There is 1 record with NULL entries for NOMINAL_EFFORT and GT_DAYS_AT_SEA. The NULL values were replaced with -1.

1,273 records with wrong or none gear codes for special condition IIB72ab were replaced to none as the special condition is gear specific. All gears none with mesh size were corrected to mesh size none (334 records). Dem_seine with mesh size none (1 record), or <16 (5 records), or 16-31 (1 record) and special condition IIB72ab were corrected to special condition none. Gill nets with mesh size none (64 records), or 10-30 (60 records), or 31-49 (55 records), or 50-59 (52 records) and special condition IIB72ab were corrected to special condition none. Otter with mesh size none (22 records), or <16 (40 records), or 16-31 (5 records) and special condition IIB72ab were corrected to special condition none.

Swedish data base B effort

All years 2003 to 2009 for the Baltic Sea, all other areas only 2009 submitted. No ALLOWED_ACTIVITY entries were found. All the SGDFF_AREA codes were converted into acceptable codes, e.g. ' III.c.22' -> '22'. 16 records with mesh size 90-99 and specon BACOMA were replaced with specon none and 2 records with mesh size 100-104 and BACOMA were replaced with 100-119 and specon none. Considered ready for upload.

UK without Scotland data base B Effort

All years 2000-2009 submitted. 231 records without a defined area (other) and 322 records in area BSA and special condition DEEP will be ignored in the analyses.

Relative changes in the effort figures submitted in 2009 to those submitted in 2008 are provided in each of the effort sections relating to the various areas covered by this report. The following notes provide some Member State descriptions of data submitted to process and any changes which explain differences in effort between the 2009 submission and earlier submissions. Note that not all countries were present at the meetings and some did not provide detailed descriptions

Belgium: Belgium provided effort data (kw*days at sea) for 2003-2009 by rectangle and by quarter, for all relevant areas where the Belgian fleets are operational. Since 2003 effort (and landings) are split proportionally over the rectangles as effort became available by rectangle from logbook data. As Belgium does not have trip-by-trip information on the true mesh size for its fleets for 2003-2006, Belgium (as well as other countries) agreed to assume certain mesh sizes for its beam trawler fleets. Beamers operating in area VIIIa,b were assumed to use a 70-79 mm mesh size as this is the minimum legal mesh size in that area for beamers. For the North Sea, the trips were split according to the rectangles reported in the logbooks, and mesh sizes were allocated in line with Council Regulation (EC) N° 2056/2001. This regulation stipulates that beam trawlers are prohibited to use less than 120 mm in ICES Division IV to the north of 56° 00' N. Therefore all beam trawl information from this part of ICES Division IV was accounted against an assumed

>120mm mesh size. The same regulation also stipulates that within the rectangle with coordinates along the east coast of the UK between 55° 00' N and 56° 00' N and the points 55° 00' N – 05° 00' E and 56° 00' N – 05° 00' E, beam trawlers can use 100 to 119 mm mesh size. Here also it was assumed that the mesh size used by the Belgian Beam trawl fleet was 100-119 mm. For the rest of ICES Division IV (the southern part) a mesh size of 80-89 mm was assumed for the beam trawlers. Apart from these assumed mesh size which are based on rectangle information from logbooks, it was also assumed that the shrimp fishery used a mesh size of 16-31 mm. The mesh size of the beam trawl fleets in the other area's was assumed to be 80-89 mm. Since 2007 mesh sizes used by beam trawls operating in different areas have been based on the true mesh sizes used on each trip.

Voyage information on the national data base calculates days at sea based on the voyage start date and the voyage end date. For example, a voyage starting on one date and returning (landing) the following day will accrue 2 days at sea. Each day a vessel is at sea is counted only once with the effort details allocated according to the longest voyage on that date. Nominal effort in kwdays is calculated as days at sea multiplied by the power of the vessel in kilowatts at the voyage landing date. Activity and gear is assessed daily; where activity in a single day covers more than one area or more than one gear; that day's effort is allocated completely to the area/gear with the longest activity that day.

The Belgian gear categories are: beam, dredge, gill, longline, otter and trammel. For trammel nets, no assumptions of mesh sizes were made. No special conditions were allocated to any Belgian fleet category until now as no Belgian vessel applied for any special condition in any year since the special conditions have been introduced.

All Belgian effort deployed within cod recovery plan areas was assigned special condition "CPother

Denmark: The National Institute for Aquatic Resources in Denmark (DTU Aqua) provided all relevant effort data for 2000-2009 for the areas: Baltic, North Sea, Skagerrak, Kattegat and Coastal and International waters in Northern Shelf in the required data format and at the required date, using the STECF-SGMOS guidelines. In 2009, major revisions had occurred in the extraction programs, due to comprehensive and iterative collaboration between DTU Aqua and the Danish Directorate for Fisheries DDF (Ministry of Food, Agriculture and Fisheries). While this led to some delays in the delivery of the final dataset, it is though considered that this process led to a considerable improvement of the data quality and consistency. As a consequence, no further improvements were required for the data provided in 2010, which are fully consistent with the 2009 dataset at the exception of minor corrections of few individual log-books records. A number of points were though underlined by the DDF with regards to the data call, including :

- There are a number of inconsistencies with regards to gear definition : The gear coding in annex 3 of the data call is not fully consistent with the gear coding of Council Regulation 1342/2008. This is the case for GILL and LONGLINE. GILL includes codes GNS and GND, however none of the two statistical codes are mentioned in 1342/2008 which only mentions GN with is a general code for Gill Nets. With regard to longlines only LL is mentioned in Regulation 1342/2008 but LONGLINE includes poles (LHP), drifting lines (LLD) etc.
- In Council Regulation 1098/2007 there are no specific gear codes mentioned, but in Council Regulation 1322/2008 (Tac and Quota for the Baltic 2009), annex 2, there are mentioned a wide range of gear which all has to have a mesh size above 90 mm. In annex 2, it is stated that drifting lines (LLD) should not be included and there is no references to drift nets.
- Denmark is not able to submit data for the Baltic in the period 2000-2009 on IBSFC areas, as mentioned in the data call. The data is not believed to be in a sufficient quality – this is the case for all IBSFC areas where a statistical rectangle is in two different IBSFC-areas and in particular statistical rectangle 39G4 where the quality of data before 2007 is in a poor quality. Therefore Denmark delivered only figures on areas 22-24 (Western Baltic) and 25-32 (Eastern Baltic). These areas are also those applied in the administrative legislation.
- There is no information in the logbook with regard to whether a vessel has applied BACOMA or T90 and the vessel is not obliged to fill in this information in the logbook. Consequently Denmark has no information with regard to Baltic Technical Conditions. Further Denmark has not yet applied article 11 and 13 in Regulation 1342/2008 and no data is reported for Cod Plan R(EC) No 43/2009. Deep-water species is defined in line with Regulation 2347/2002 which states fishing trips >= 100 kg mix of species mentioned in the regulation.

- In the Baltic, Denmark has applied the **yearly** allowed activity even though the data call states data has to be divided by quarters.
- Denmark submitted data last year based on the definition in the data call which was calendar days at sea. This is not the definition applied for administrating the regulation 1342/2008 and regulation 1098/2007. However the baseline was calculated last year with this definition and the Commission was informed of the inconsistency between the definition in the data call and the definition applied by the Danish Administration and as such the time series of the data call will not be broken.

The nominal effort is calculated on trip basis using HP registration :

Nominal effort =Max_horsepower*0,7355*Days_at_sea.

If there is no logbook, the days at sea is set to 1.

France: For France effort data from 2000 to 2008 in kW and gross tonnage days at sea were updated in the mixed fishery database after the meeting of June. These data give the number of vessels concerned in a defined area for each fishery for all gears with all mesh size ranges.

*The effort calculated in last year's report as kw*fishing hours have been corrected to kw*days at sea according to the specifications in Council Regulation (EC) N° 43/2009.*

But it appears to be significant differences between the two data sets which could be explain as follow : Between submissions, the French national data base was updated and some changes were made, as removals of duplicate records (mainly for gillnets and trammel nets), updates of referential (vessels, mesh size). These corrections can explain the overestimation of catches and effort data computed in the first data set.

Given the incapacity to define the route of a fishing boat from the entry in the regulated area to the fishing ground, the present effort calculation is using numbers of fishing hours divided by 24 in a regulated area rounded up to number of days. This may lead to an underestimation of the fishing effort for some fleets. Only fishing trips targeting regulated species were taken into account.

Concerning data quality, data have been compiled from logbook recorded in the French national database. Data used are not completely exhaustive but the data quality has been improved since 2000. All data were provided for all area concerned by the cod recovery plan but they did not take into account limits defining waters under the sovereignty or jurisdiction of Member States as laid down in article 2a of the Amendments to Regulation (EC) No 423/2004 about geographical definition.

The special conditions have been calculated thanks to an algorithm taking into account the specific composition for each trip.

A reference table have been used to create the relationship between the mesh size recorded into the logbook and the mesh size range defined into the mixed fisheries database. When this information is missing, the missing value '-1' has been used.

Note that the French data were revised and resubmitted early in December 2009 – these changes have been incorporated in this report. It is understood further submissions were made to the Commission – these have not been incorporated here and so a discrepancy is likely.

Germany: Germany provided fleet specific effort data for 2000-2009 in the requested formats derived from official logbook data. However, data on vessels <10m in the North Sea do not cover all vessels and trips because these vessels normally do not have to fill out logbooks. Number of vessels <10m (North Sea) and <8m (Baltic) is provided in an extra data file as proxy for effort. For the Baltic, Germany has applied the yearly allowed activity and capacity even though the data call states data has to be divided by quarters. The calculation procedure follows closely the describtion in the STECF technical report "Some technical guidance towards national fleet specific fishing effort and catch data aggregation" (ISBN 978-92-79-12134-0). This implies a calculation of kw-days based on calendar days. The data consider the aggregation by quarter, area, gear, mesh size, and existing derogations including special conditions of 8.1.a, 8.1.c, 8.1.d, 8.1.e and 8.1.f for the years 2000-2008. During 2000-2008, the fleets did not apply or have been eligible for

other special conditions as confirmed by personal communication with the control and enforcement institute (BLE). For 2009 the special conditions from the new cod management plan are used.

Ireland: Ireland provided fleet specific effort data for 2000-2009 in the requested formats, derived from the national logbook database (IFIS) for vessels ≥10 meters in length provided by the Department of Agriculture, Fisheries and Food. Vessels less than 10m in length are not required to complete logbooks, and therefore no effort is available for these vessels. Data has been provided in nominal effort as kW*days-at-sea, effective effort in kW*hours fishing, GT*days-at-sea, and vessel numbers within each category. The data covers all areas requested in the STECF-SGMOS data call in which the Irish fleet is active. Effort data conforms to the requested aggregation, of quarter, area, gear, mesh size, and vessel length. Mesh size information was only available from 2003 onwards. Days-at-sea effort for 2000-2002 is presented as a calculated proxy, obtained from the average ratio of operational fishing days to days-at-sea by gear during 2003 to 2005.

Minor revisions have been made to the 2003-2008 data provided to STECF-SGMOS in 2009. These revisions result from ongoing improvement of the official logbook database (IFIS) and input of additional logsheet records unavailable at the time of 2009 submission.

Construction of days-at-sea data follows the methodology guidelines provided by the Joint Research Council at a meeting held by the Commission in February 2009 were followed. This methodology was applied to the Irish logbook data, using trip departure, operation, and landing dates to determine activities whilst away from port. Only one Gear and area combination is applied to any one vessel day. The gear and area during a trip were assumed to be known only on days where fishing operations occur. Gear and area are allocated according to daily dominant fishing activity and area. Non-fishing days at sea (inactive days away from port) during a trip have been inferred using the guidelines provided by the JRC. Gear and area of non-fishing days from departing port to the first fishing operation date are assumed to be that of the first operation. Gear and area of non-fishing days between days of fishing are assumed to be those of the later operation date. Non-fishing days from the last operation day to returning to port are assumed to be the same as the last operation.

The data call requested detailed area information (e.g. coast, RFMO, EU). It was not possible to aggregate data at this level of spatial detail. Detailed areas were assumed. Where an EU category existed within an area, all data from that area was categorised as EU, with the exception of ICES division X assumed to be RFMO. Those ICES divisions without an EU category where assumed as 1 coast, 2 coast, and 12 RFMO.

No special conditions were allocated to Irish fleet categories prior to 2009, as no Irish vessel applied for the special conditions relating to Annex IIa (Council Regulation 40/2008) since the special conditions were introduced. Those special conditions applied for by Irish vessels relate to the allocation of additional days at sea for enhanced observer coverage. No Irish vessels were granted exclusion from the effort regime during 2009. During quarter 4 of 2009, 3 vessels availed of additional effort under an Irish Article 13 scheme within the Irish Sea (VIIa), effort under this scheme has been marked as "CPart13". Additional effort was claimed under Article 13 where vessels operated west of the "French line" (2.d), however it was not possible to assign such effort to special condition "CPart13" due to unavailability of 2009 VMS data at the time of data submission. All other Irish effort deployed within cod recovery plan areas was assigned special condition "CPother".

Effort data was also provided by BSA, labelled as such within the area field. It should be noted that effort from this area is also contained within the relevant ICES areas. Further more, deepwater effort has been provided, classified as "DEEP" within the special condition field. Deepwater effort was identified as those vessels carrying out individual trips retaining 100kg or more of aggregated deepwater species (Annex I of Council Regulation 2347/2002), regardless of permit status. In addition, the group agreed to include trips where the aggregated Annex I species represented greater than 35% of the total trip landings as deepwater. This effort is a duplication of effort within the relevant areas.

Latvia: Latvia provided effort data for 2003-2009 in the requested formats. The data derived from official logbooks which are stored in national data base. Latvian fishermen according to the Latvian legislation have to fill logbook for every fishing trip they make. The filled logbooks stored in the ICIS information system include information on vessel name, register number and radio signal; departure and arrival dates and time; fishing operation date and time; fishing operation coordinates; gear type used; landing per species. Effort data are aggregated on quarter, ICES Subdivisions, gear, mesh size, and vessel length segments. Nominal

fleet specific effort data are presented in terms of kW*days at sea (kWdays), gross tonnage*days at sea (GTdays) and number of vessels per vessel length segments. It is planned to prepare the data for 2000-2002 in the nearest future after extraction and processing of the historical data from the old database.

Netherlands: The Netherlands attended the first of the meetings of STECF-SGRST on the assessment of fishing effort regime and attended in 2008 but was not present in 2009. IN that year, the Netherlands provided a completely reworked data set based on logbook information which was considered more reliable than the previous submissions based on VMS. According to the best information available from the Dutch Ministry, fishing effort for the Dutch fleets (2000-2009) is calculated using the guidelines of Ratz (2009).

Portugal: Portugal provided effort data for 2004-2008 (Kw*days and GT*days) by quarter and year in the required data format for the areas 8c and 9a where the Portuguese fleet operates. Numbers of vessels were not provided. The information refers to all fishing vessels with overall length ≥10 m, licensed for the period 2004-2008. The gear categories and mesh size provided were in agreement with the data call and Annex IIB, gillnet with mesh size >60mm, otter trawl with mesh size >32mm and bottom longlines. However, no mesh size information could be provided for significant parts of the fleets deploying the gears defined. In the case of trawl, the unknown mesh size means that although the mesh size is greater than 32 mm, it is not possible to specify according to the categories defined by this working group, but their effort can be taken into account. The same is not applicable to the gillnets with unknown mesh size. This resulted in a high proportion of gillnet effort which could not be assigned to the defined derogations and therefore were grouped as unknown (none). Special conditions have been provided for a mixed passive gear category ("PGP"), which includes vessels operating with more than one gear. Although this group includes unregulated gears (trammel nets, traps, dredges, etc.) and regulated gears (longlines and gillnets) affected by the special conditions, it was not possible to consider the gear specific effort in the evaluation and they were added to "none". The trawl fleet was further allocated to two fisheries, targeting crustaceans operating in area 9a or targeting demersal fish operating in areas 8c and 9a. Effort was computed differently for those vessels covered by the Southern Hake and *Nephrops* recovery plan which have effort limitations and other vessels. The former were computed based on logbooks information and the last based on sales notes, assuming each sale represents one fishing day.

Spain: The source of data is estimations made from logbooks (all vessels ≥10 meters). 2000 and 2001 data are not provided since they are not very reliable; logbook cover and quality were not very high in those years, these aspects have improved each year over the period since. Gulf of Cadiz was excluded through the port of landing data for Annex IIB dataset; results were successfully cross-checked with Working Group on Hake, Megrim and Monkfish information. Drift longline is an Annex IIB unregulated gear, therefore in this annex dataset is codified as gear "none". The gear category "none" includes also and overall trolling and hand lines and "unknown gears" of which main landings are also from small pelagic and tuna. 2002-2009 kW*days and GT*days and number of vessels are provided by quarter, gear, mesh size range, area and special condition.

Sweden: Sweden provided fleet specific effort data for 2000-2008 in the requested formats derived from official logbook data bases covering all vessel ≥10m. In addition to the usual nominal effort data in kW*days at sea, the requested effort data were also available in the units of GT*days at sea and number of vessels. The latest data submission covers the areas defined in Annex IIA, i.e. Skagerrak, Kattegat, North Sea. The data consider the aggregation by quarter, area, gear, mesh size, and existing derogations including special conditions of 8.3.a, 8.3.b.

For vessels <10m Sweden provided total nominal effort usual nominal effort data in kW*days at sea, the requested effort data are also presented in the units of GT*days at sea in areas defined in Annex IIA, i.e. Skagerrak, Kattegat, North Sea. The data consider the aggregation by quarter, area, gear, mesh size, and existing derogations including special conditions of 8.3.a, 8.3.b.

The main problem in using Swedish data analysing the use of technical regulations according to Annex 11a has been the mismatch in the introduction of a new technical measure in annex IIA and the national coding of the gear in the logbook. This has meant that the use of the special condition IIa8.3a has been assessed by other data sources than the logbook. During 2007, gear code for the 8.3 a was introduced which allowed a comparence of the data sources for 2005, and 2006.the result from this comparison showed that the other

data source and the loggbok matched satisfactory. For special condition IIa8.3b there has been no such mismatch the introduction of the gear and the gear cod was introduced simultaneously.

UK England (England, Wales & Northern Ireland): provided effort data for 2000-2008. Details of the approach used to provide data is given in the Annex at the end of this note. The submission in 2009 involved revision of data. Work has been carried out to improve the linkage of activity to special conditions in light of contact with the Commission and the JRC to deal with inconsistencies and differences in interpretation of the special conditions, for example, instances where the special condition had been interpreted differently by the UK as well as instances where errors in the allocation of effort to the special conditions had occurred. In addition, the various quality initiatives introduced by the JRC in the central processing of the date reported to improve the quality of the data have been worked back to be included in the initial processing stages in the UK – for example, instances of data oddities (e.g. mesh sizes being reported for gears where meshes are not applicable such as long lines) are now detected and treated as appropriate in the compilation of data prior to submission.

In addition to the above, within the UK there have been changes to the core data source used to switch from a dedicated reference databases compiled from an aggregation of data from separate databases on activity held by the different fisheries administrations in the UK to using the IFISH UK database introduced as part of continuing development of combined data systems within the UK. This move has led to some slight changes in the data, primarily as a result of a change in the linkage to the vessel details for engine power and gross tonnage. These changes have been separately assessed and are of a minor overall impact.

UK (Scotland): Scotland provided effort data for the years 2000-2008 in the format requested in the Data call covering those years. The databases available to UK (Scotland) do not provide information on whether a vessel adopted one of the technical measures relevant to some special conditions or on special conditions requiring in-season management. Therefore, special condition designations are only entered for certain fisheries as detailed in report STECF-SGMOS-09-05. In 2009 data for 2000-2008 was aggregated according to the regulated gears set out in regulation (EC) 1342/2008 and this year the special condition codes related to those categories are included, i.e. effort in non-regulated gears or in areas outwith the Cod Recovery Zone were assigned to special condition "none"; effort inside the Cod Recovery Zone for regulated gears other than TR1 and TR2 were assigned to special condition "CPOther"; and effort in the Cod Recovery Zone for TR1 and TR2 gears was assigned to special condition "CPart13", in reflection of the various measures under the Scottish Conservation Credits Scheme for vessels using these gear types. 63 Scottish vessels have been granted exemption under Article 11 from 1 February 2010 but there was no effort exempted under this Article in2009.

Data is compiled on a basis comparable with the information from the rest of the UK. Effort on voyages using more than one mesh size is allocated according to log book data. This affects the information for effort in the years prior to 2003, when vessels were allowed to use different mesh sizes within the same voyage. Similarly, effort on voyages fishing in more than one rectangle is allocated according to logbook data. Starting with the 2007 STECF meetings Scottish fleet effort for the other gears (dredges, pelagic seines, pots) is provided directly by UK (Scotland) on a comparable basis with that provided previously by UK (England).

In an attempt to summarise the definitions applied by member states to record various metrics of effort is given in Table 5.2.2.2. This table is under construction and will be more fully populated at the 2011 meeting of the effort group.

Table 5.2.2.2 Definitions used in the calculation and recording of effort by member state

Country	Definition used to calculate days at sea	Definition used to calculate nominal_effo	Definition used to calculate GT_days_at_sea	Apportionment of effort where activity in a voyage occurs in more than one area or uses more than one gear
Belgium	Voyage information on the national data base calculates days at sea based on the voyage start date and the voyage end date. For example, a voyage starting on one date and returning (landing) the following day will accrue 2 days at sea. Each day a vessel is at sea is counted only once with the effort details allocated according to the longest voyage on that date.	Nominal effort in kwdays is calculated as days at sea multiplied by the power of the vessel in kilowatts at the voyage landing date.	GT_days_at_sea is calculated as the days at sea multiplied by the Gross Tonnage of the vessel at the voyage landing date.	Activity and gear is assessed daily; where activity in a single day covers more than one area or more than one gear; that day's effort is allocated completely to the area/gear with the longest activity that day.
Denmark	Voyage information on the national data base calculates days at sea based on the voyage start date and the voyage end date. For example, a voyage starting on one date and returning (landing) the following day will accrue 2 days at sea. If more than one voyage occurs on the same day, that day is counted only once and the effort is apportioned between the voyages	Nominal effort in kwdays is calculated as days at sea multiplied by the power of the vessel in kilowatts at the voyage landing date.	GT_days_at_sea is calculated as the days at sea multiplied by the Gross Tonnage of the vessel at the voyage landing date.	Activity and gear is assessed daily; where activity in a single day covers more than one area or more than one gear; that day's effort is apportioned equally between the area/gears recorded
Estonia				
Finland				
France				
Germany	Voyage information on the national data base calculates days at sea based on the voyage start date and the voyage end date. For example, a voyage starting on one date and returning (landing) the following day will accrue 2 days at sea. If more than one voyage occurs on the same day, that day is counted only once and the effort is apportioned between the voyages	Nominal effort in kwdays is calculated as days at sea multiplied by the power of the vessel in kilowatts at the voyage landing date.	GT_days_at_sea is calculated as the days at sea multiplied by the Gross Tonnage of the vessel at the voyage landing date.	Activity and gear is assessed daily; where activity in a single day covers more than one area or more than one gear; that day's effort is allocated completely to the area/gear with the longest activity that day.
Ireland	Voyage information on the national data base calculates days at sea based on the date of the voyage start and the voyage end. For example, a voyage starting on one date and returning (landing) the following day will accrue 2 days at sea. Days at sea for voyages leaving on the same date as the return of the previous voyage are adjusted down by half a day. Multiple voyages on the same date will accrue only 1 day at sea in total, with the effort details accorded as for the longest voyage that day.	Nominal effort in kwdays is calculated as days at sea multiplied by the power recorded for the vessel (in kilowatts) at the time of the data extraction.	GT_days_at_sea is calculated as the days at sea multiplied by the recorded Gross Tonnage of the vessel at the time of the data extraction.	Activity and gear is assessed daily; where activity in a single day covers more than one area or more than one gear; that day's effort is allocated completely to the area/gear with the longest activity that day.
Latvia	Voyage information on the national data base calculates days at sea based on the voyage start date and the voyage end date. For example: a voyage starting on one date and returning (landing) the same date will accrue 1 day at sea; a voyage starting on one date and returning (landing) the following date will accrue also 1 day at sea; If more than one voyage occurs on the same date, that day is counted only once.	Nominal effort in kwdays is calculated as days at sea multiplied by the power of the vessel in kilowatts at the voyage landing date.	GT_days_at_sea is calculated as the days at sea multiplied by the Gross Tonnage of the vessel at the voyage landing date.	Activity and gear is assessed daily; where activity in a single day covers more than one area or more than one gear; that day's effort is allocated completely to the area/gear with the longest activity that day.
Lithuania				
Netherlands				
Poland				
Portugal				
Spain				
UK - England and other non-Scotland	Voyage information on the non-Scottish UK national data base, FAD, calculates days at sea based on the dates of the voyage start and the voyage end. Voyage information on the Scottish national data base, FIN, calculates days at sea as the number of 24 hour periods in the duration of the voyage, rounded up. Vessels landing into Scotland are entered onto FIN; those landing into the rest of the UK are entered into FAD. Scottish vessels landing outwith the UK are entered into FIN. Rest UK vessels landing outwith the UK are entered into FAD. Because most voyages by Rest UK vessels are entered into FAD, the calculation of days at sea is generally date based. Days at sea for voyages leaving on the same date as the return of the previous voyage are adjusted down by half a day.	Nominal effort in kwdays is calculated as days at sea multiplied by the power of the vessel in kilowatts at the voyage landing date.	GT_days_at_sea is calculated for years from 2003 as the days at sea multiplied by the Gross Tonnage of the vessel at the voyage landing date. The information is not available on a comparable basis before 2003 because this was before the completion of the EU wide vessel gross tonnage recalibration exercise.	Activity and gear is assessed daily; where activity in a single day covers more than one area or more than one gear; that day's effort is apportioned equally between the area/gears recorded
UK - Scotland	See description for UK - England and other non-Scotland. Because most voyages by Scottish vessels are entered into FIN, the calculation of days at sea is generally based on the number of 24 hour periods, rounded up. Days at sea for voyages leaving on the same date as the return of the previous voyage are adjusted down by half a day.	Nominal effort in kwdays is calculated as days at sea multiplied by the power of the vessel in kilowatts at the voyage landing date.	GT_days_at_sea is calculated for years from 2003 as the days at sea multiplied by the Gross Tonnage of the vessel at the voyage landing date. The information is not available on a comparable basis before 2003 because this was before the completion of the EU wide vessel gross tonnage recalibration exercise.	Activity and gear is assessed daily; where activity in a single day covers more than one area or more than one gear; that day's effort is apportioned equally between the area/gears recorded
Sweden				

5.2.3. Effective fleet specific effort data by rectangle 2003-2009

In order to provide spatial distributions patterns of fishing effort, SGMOS continued to use the data base structure agreed previously to collate data on effective effort in units of trawled hours by statistical rectangle for mobile gears only. The data have been made available from the national logbooks and aggregated to the regulated gear groups (derogations) defined in Annexes IIA, IIB and IIC of Council Reg. 40/2008 and the cod plan 43/2009.

The following notes summarise data quality control issues observed by JRC and Table 5.2.3.1 provides an overview of the quality of the submitted data

Table 5.2.3.1 Overview on 2003-2008 effective effort data reports (trawled hours by derogation and rectangle) provided by EU member states with and without special conditions laid down in Annexes IIA-C of Council Regulation 40/2008 and 43/2009

Country	data submission	submitted	reviewed	updated	reviewed	ready for upload	uploaded
BEL	DCF web site	27-Aug	30-Aug			30-Aug	13-Sep
DEN	DCF web site	28-May	02-Jun	03-Jun	04-Jun	04-Jun	11-Jun
EST	DCF web site	24-May	28-May			04-Jun	11-Jun
FIN	none						
FRA	French Data server	14-Sep	15-Sep			15-Sep	16-Sep
GER	DCF web site	28-May	03-Jun			03-Jun	11-Jun
IRL	DCF web site	28-May	04-Jun			04-Jun	11-Jun
LAT	DCF web site	28-May	04-Jun	01-Jul	01-Jul	01-Jul	05-Jul
LIT	DCF web site	14-Jun	14-Jun			14-Jun	17-Jun
NED	email	26-May	07-Jun			07-Jun	11-Jun
POL	DCF web site	09-Jun	10-Jun	14-Jun	14-Jun	14-Jun	17-Jun
POR	DCF web site	28-May	08-Jun			08-Jun	11-Jun
SPN	email	21-Jul	23-Jul			23-Jul	26-Jul
SWE	email	28-May	08-Jun	05-Jul	06-Jul	06-Jul	06-Jul
UK SCO	email	31-May	08-Jun	09-Jun	09-Jun	09-Jun	11-Jun
UK	DCF web site	14-Jun	14-Jun			14-Jun	17-Jun

Belgium:

There are 1071 records with wrong area codes (7e, 7f, 7g, 7h, 8a, 8b) and specific condition Cpother. Specific condition should be 'none'. There are 12 records with area code 7j, whereas the acceptable codes are 7j EU or 7j RFMO.(Areas 7j EU or 7j RFMO are not regulated by Cpother). There are 407 records with gear code OTTER, none mesh size code and specific condition Cpother. Mesh size should be defined. There are 441 records with wrong mesh code for gear BEAM and specific condition Cpother. The acceptable mesh codes are 80-89, 90-99, 100-119, >=120. There are 27 records with gear code DREDGE and specific condition Cpother. This gear isn't regulated by this specific condition. There are 28 records with none gear code and specific condition Cpother. This gear isn't regulated by this specific condition. There is 1 record with gear code POTS and specific condition Cpother. This gear isn't regulated by this specific condition.

Danish data base C Effort effective revised:

All years 2000-2009 reported. No special conditions other than DEEP are specified. Data considered ready for upload.

Estonia Data base C Effort effective:

Only 2009 data submitted. Given that the area classifications and the vessel size classifications in the Baltic Sea have changed compared to last year's data call, the total time series requested 2003-2009. Gill 110-149 in the Baltic was replaced with Gill 110-156 (14 records). Pel_trawls bacoma 100-119 were replace with >=105 (5 records). Considered ready for upload.

Finish data base C Effort effective:

No data delivered.

France:

Data delivered are for 2000-2008. 2009 data are announced to be delivered by 27 September. Vessel length codes “015m” were converted to “o15m”, “010t15m” to “o10t15m” and “U10m” to “u10”. There are 1,426 gears with “N/A” code were replaced with “none”.,There are 1,365 gears with “SMALL_BEAM” code were replaced with “BEAM”. There are 1,163 records with mesh size but none gear, Mesh size was replaced with “none”. There are 62 records with unknown rectangles such as 008D, 007D, 007E, 0070 (remains unclear). There are 21 records with wrong mesh size code >16, were replaced with “none”. There are 2 records with wrong mesh size code 60-69 for gear OTTER, were replaced with “55-69”. There are 44 records with Trammel and Specific Condition IIA83g and mesh size code above 110 or none. Special condition was replaced with “none”.

German data base C Effort effective:

All years 2003 to 2009 for the Baltic Sea, all other areas only 2009 submitted. Vessel length codifications o15, o40 and 12t18m were corrected to o15m, o40m and o12t18m. Gear code MIS is replaced with none (433 records), for these records the mesh size codes were set to none, 13 records with area 12 were replaced to area 12 RFMO (wrongly coded by the data call). 3 records of pel_trawl 32-54 in 2009 without an area will be ignored in the analyses. Considered ready for upload.

Irish data base C Effort effective:

All years 2003 to 2009 submitted. Specon CPOTHER was replaced with none. Considered ready for upload.

Latvian data base C Effort effective:

All years 2003 to 2009 submitted. Only Baltic areas covered. Considered ready for upload.

Lithuanian data base B Effort:

Only year 2009 submitted. One record with longline and mesh size range 110-156 was corrected to none. Considered ready for upload if no revision provided.

Netherlands data base B Effort:

Only year 2009 reported. No special conditions were defined. All records area 3as were corrected to 3an. Considered ready for upload if no revision provided.

Polish data base C Effort effective:

No data submitted for 2003, only years 2004-2009. 1 record with empty gear was corrected to none. Considered ready for upload.

Portuguese data base C Effort effective

All years 2003 to 2009 reported. 364 records with gear PGP were replace with none. 5 records with area 12 were replaced to area 12 RFMO (wrongly coded by the data call). 44 records with area 6a RFMO were updated to 6a. 1 record with area 34.1.1 RFMO is updated to 34.1.1 COAST. Considered ready for upload if no revision provided.

Scottish data base C Effort effective

Uploaded data only for 2009. There are 3 records with ‘UNK’ entries for RECTANGLE and ‘-1’ for SGDFF_AREA. There are 4 records with unspecified (-1) SGDFF_AREA codes. There are 61 records with

the combination 'DEEP' and 'BSA' for the SPECON and SGDFF_AREA respectively. Specon CPOTHER was replaced with none. Considered ready for upload.

Spanish data base C Effort effective

Data submitted for 2002-2009 and only for areas 8c and 9a. No vessel length information. There are 1,244 records with unspecified rectangle (1237 with the entry 'NULL' and 7 with empty entry).

Swedish data base C Effort effective

All years 2003 to 2009 submitted. All the SGDFF_AREA codes were converted into acceptable codes, e.g. ' III.c.22' -> '22'. 216 records with mesh size 90-99 and specon BACOMA were replaced with specon none and 3 records with mesh size 100-104 and BACOMA were replaced with 100-119 and specon none. 14 records with unknown rectangle (tom) will be ignored. Considered ready for upload.

UK without Scotland data base C Effort effective

All year 2000-2009 submitted. 499 records without a defined area (other) and 3,370 records in area BSA and special condition DEEP will be ignored in the analyses. Considered ready for upload.

The following notes provide Member State descriptions of the data submitted

Belgium: Belgium provided effective effort by ICES statistical rectangle in units of hours trawled for the period 2003-2009, derived from the official logbook databases for all vessels ≥10 meters. The data covers all areas in which the Belgian fleets are active and conforms to the requested aggregation, by quarter, area, gear and mesh sizes. No spatial effort information is available for vessels less than 10m in length.

Trawled hours were calculated by summing fishing time to the aggregation level requested in the data call. To ensure consistency between datasets, the same base operational logbooks data was used as for the aggregation of days-at-sea effort.

As Belgium does not have trip-by-trip information on the true mesh size for its fleets for 2003-2006, Belgium (as well as other countries) agreed to assume certain mesh sizes for its beam trawler fleets. Beamers operating in the Bay of Biscay (VIIIa,b) were assumed to use a 70-79 mm mesh size as this is the minimum legal mesh size in that area for beamers. For the North Sea, the trips were split according to the rectangles reported in the logbooks, and mesh sizes were allocated in line with Council Regulation (EC) N° 2056/2001. This regulation stipulates that beam trawlers are prohibited to use less than 120 mm in ICES Division IV to the north of 56° 00' N. Therefore all beam trawl information from this part of ICES Division IV was accounted against an assumed >120mm mesh size. The same regulation also stipulates that within the rectangle with coordinates along the east coast of the UK between 55° 00' N and 56° 00' N and the points 55° 00' N – 05° 00' E and 56° 00' N – 05° 00' E, beam trawlers can use 100 to 119 mm mesh size. Here also it was assumed that the mesh size used by the Belgian Beam trawl fleet was 100-119 mm. For the rest of ICES Division IV (the southern part) a mesh size of 80-89 mm was assumed for the beam trawlers. Apart from these assumed mesh size which are based on rectangle information from logbooks, it was also assumed that the shrimp fishery used a mesh size of 16-31 mm. The mesh size of the beam trawl fleets in the other area's was assumed to be 80-89 mm. Since 2007 mesh sizes used by beam trawls operating in different areas have been based on the true mesh sizes used on each trip.

The Belgian gear categories are: beam, dredge, gill, longline, otter, and trammel. For trammel nets, no assumptions of mesh sizes were made. No special conditions were allocated to any Belgian fleet category until now as no Belgian vessel applied for any special condition in any year since the special conditions have been introduced.

All Belgian effort deployed within cod recovery plan areas was assigned special condition "CPother".

Denmark: Denmark provided effort data by rectangle for 2003-2009, with the same gear and mesh sizes categories and including the same derogations as for nominal effort data (kW*days, see Sec. 5.5.2). Fishing

hours are not registered in Danish logbooks, and were thus back calculated from the information of fishing days. Fishing days are calculated as the number of days with registered catches by ICES square by trip. For short trips (where fishing days*24 is larger than numbers of hours at sea (arrival time – departure time), hours by square = Hours at sea * Fishing days by square / total fishing days by trip. For long trips (where fishing days*24 is lower or equal than numbers of hours at sea, hours by square = fishing days * 24.

France: France updated effective effort data in kW*days GT*days and numbers of boats for the period 2000-2008. These data were provided by rectangle and by quarter, for all areas in the request format taking into account derogations defined in Annex 2a of the Council Reg. 40/2008. These data are available from logbooks and give the number of hours trawled for each fleet.

Germany: Germany aggregated the effective effort in units of trawled hours deployed by vessels. As requested, this data submission utilised ICES statistical rectangles. The information on trawled hours from logbook data, however, are suspected to be rather uncertain. Describtions for data on <10m, <8m vessels and special conditions from part B also apply to part C.

Ireland: Ireland provided effective effort by ICES statistical rectangle in units of hours trawled for the period 2003-2009, derived from the national logbook database (IFIS) for vessels ≥10m in length provided by the Department of Agriculture, Fisheries and Food. No spatial effort information is available for vessels less than 10m in length. This has been provided in the requested formats for demersal trawled gears, i.e. beam trawls, otter trawls, and demersal seines. Data has been aggregated by year, quarter, vessel length, and gear for all areas detailed in the STECF-SGMOS data call in which the Irish fleet is active. Trawled hours were calculated by summing fishing time to the aggregation level requested in the data call. To ensure consistency between datasets, the same base operational logbooks data was used as for the aggregation of days-at-sea effort.

The data call requested detailed area information (e.g. coast, RFMO, EU). It was not possible to aggregate data at this level of spatial detail. Detailed areas were assumed. Where an EU category existed within an area, all data from that area was categorised as EU, with the exception of ICES division X assumed to be RFMO. Those ICES divisions without an EU category where assumed as 1 coast, 2 coast, and 12 RFMO.

No special conditions were allocated to Irish fleet categories, as no Irish vessel applied for the special conditions relating to Annex IIa (Council Regulation 40/2008) since the special conditions were introduced. Those special conditions applied for by Irish vessels relate to the allocation of additional days at sea for enhanced observer coverage. During quarter 4 of 2009, 3 vessels availed of additional effort under an Irish Article 13 scheme within the Irish Sea (VIIa), spatial effort under this scheme has been marked as "CPart13". Additional effort was claimed under Article 13 where vessels operated west of the "French line" (2.d), however it was not possible to assign such effort to special condition "CPart13" due to unavailability of 2009 VMS data at the time of data submission. All other Irish effort deployed within cod recovery plan areas was assigned special condition "CPother".

Effort data was also provided by BSA, labelled as such within the area field. It should be noted that effort from this area is also contained within the relevant ICES areas. Further more, deepwater effort has been provided, classified as "DEEP" within the special condition field. Deepwater effort was identified as those vessels carrying out individual trips retaining 100kg or more of aggregated deepwater species (Annex I of Council Regulation 2347/2002), regardless of permit status. In addition, the group agreed to include trips where the aggregated Annex I species represented greater than 35% of the total trip landings as deepwater. This effort is a duplication of effort within the relevant areas.

Latvia: Latvia provided effective fleet specific effort data for the period 2003-2009. These data are available from logbooks which are stored in national data base. Effective fleet specific effort data were presented by ICES rectangles and expressed in hours fished for the Baltic Sea ICES Subdivisions by quarter, gear, mesh size, and vessel length segments in the requested format.

Netherlands: The Netherlands provided effective effort (in units of fishing hours) by rectangle, as requested in the official data call. According to the best information available from the Dutch Ministry, fishing effort for the Dutch fleets (2000-2009) is calculated using the guidelines of Ratz (2009).

Portugal: Portugal provided effective effort data by statistical rectangle in hours fished.

Spain: Spain did not provide effective effort data by statistical rectangle.

Sweden: Sweden provided effort data by rectangle for 2003-2008, with the same gear and mesh sizes categories and including the same derogations as for nominal effort data (see sec. 5.5.2). The effort data are expressed as hours fishing per trip and vessel /Ices square, based on the set position of the gear. The data could overestimate the hours spent /Ices square since the fishing operation to a large extent could have been performed in neighbouring Ices rectangles.

UK England: England provided effort by ICES statistical rectangle data for the years 2003-2008. It was not possible to provide trawled hours data however. This is because hours trawled is not a mandatory field in the fishers' logbooks and is therefore not necessarily completed. Instead, the data used to provide nominal effort (see section 5.5.2) is held on a statistical rectangle basis by UK (England). This data was simply multiplied by 24 to get a measure of fishing effort expressed in hours.

UK (Scotland): UK (Scotland): Scotland provided effort by ICES statistical rectangle data for the years 2003-2009. It was not possible to provide trawled hours data however. This is because hours trawled is not a mandatory field in the fishers' logbooks and is therefore not necessarily completed. Instead, the data used to provide nominal effort (see section 5.5.2) is held on a statistical rectangle basis by UK (Scotland). This data was simply multiplied by 24 to get a measure of fishing effort expressed in hours. As for the nominal fleet specific effort data, new special conditions apply in 2009.

5.2.4. Fleet specific landing and discard data 2003-2009

The availability of the requested fleet specific catch and discard data is summarised, by Member State in the Table 5.2.4.1. According to the experts, none of the national data bases includes unallocated landings. Not all Member States provided landings, discards and biological data from all species requested, so only anglerfish, cod, haddock, whiting, saithe, hake, plaice, sole, mackerel, horse mackerel, blue whiting, rays, penaeid shrimps and *Nephrops* are considered in the analyses conducted. Overall, the landings figures compiled in the data base are consistent with the officially reported landings of the stocks considered in the analyses. Some Member States again did not provide essential quality parameters of the data. Consequently, STECF-SGMOS remains in a poor situation regarding the description of the quality of the fleet specific estimates of discards and age disaggregated catches, mainly due to lack of requested information (no. of discard samples, fish measured and aged). Quality control notes observed by JRC are summarised below followed by further explanatory notes from some Member Staes

Table 5.2.4.1 Overview on 2003-2008 catch data reports (landings and discards) provided by EU member states with and without special conditions laid down in Annexes IIA-C of Council Reg. 40/2008 and 43/2009

Landings

Country	data submission	submitted	reviewed	updated	reviewed	ready for upload	uploaded
BEL	DCF web site	27-Aug	30-Aug			30-Aug	13-Sep
DEN	DCF web site	28-May	02-Jun	03-Jun	04-Jun	04-Jun	11-Jun
EST	DCF web site	24-May	28-May			04-Jun	11-Jun
FIN	DCF web site	26-May	28-May	03-Jun	04-Jun		
FRA	French Data server	14-Sep	15-Sep			15-Sep	16-Sep
GER	DCF web site	28-May	03-Jun			03-Jun	11-Jun
IRL	DCF web site	28-May	04-Jun	06-Jun	07-Jun	07-Jun	11-Jun
LAT	DCF web site	28-May	04-Jun	08-Jul	08-Jul	08-Jul	09-Jul
LIT	DCF web site	26-May	07-Jun	14-Jun	14-Jun	14-Jun	15-Jun
NED	email	26-May	14-Jun			14-Jun	16-Jun
POL	DCF web site	28-May	02-Jun	25-Jun	01-Jul	01-Jul	05-Jul
POR	DCF web site	28-May	07-Jun	11-Jun	14-Jun	14-Jun	16-Jun
SPN	email	31-May	09-Jun			03-Aug	03-Aug
SWE	email	28-May	08-Jun	01-Jul	01-Jul	01-Jul	05-Jul
UK SCO	email	28-May	08-Jun	09-Jun	09-Jun	09-Jun	11-Jun
UK	DCF web site	17-Jun	17-Jun	01-Jul	01-Jul	01-Jul	05-Jul

Discards

Country	data submission	submitted	reviewed	updated	reviewed	eady for uploa	uploaded
BEL	DCF web site	27-Aug	30-Aug			30-Aug	13-Sep
DEN	DCF web site	28-May	02-Jun	03-Jun	04-Jun	04-Jun	11-Jun
EST	DCF web site	24-May	28-May			04-Jun	11-Jun
FIN	DCF web site	26-May	28-May	03-Jun	04-Jun		
FRA	French Data server	14-Sep	15-Sep			15-Sep	16-Sep
GER	DCF web site	28-May	03-Jun			03-Jun	11-Jun
IRL	DCF web site	28-May	04-Jun	06-Jun	07-Jun	07-Jun	11-Jun
LAT	DCF web site	28-May	04-Jun	08-Jul	08-Jul	08-Jul	09-Jul
LIT	DCF web site	26-May	07-Jun	14-Jun	14-Jun	14-Jun	15-Jun
NED	email	26-May	14-Jun			14-Jun	16-Jun
POL	DCF web site	28-May	02-Jun	25-Jun	01-Jul	01-Jul	05-Jul
POR	DCF web site	28-May	07-Jun	11-Jun	14-Jun	14-Jun	16-Jun
SPN	email	31-May	09-Jun			03-Aug	03-Aug
SWE	email	28-May	08-Jun	01-Jul	01-Jul	01-Jul	05-Jul
UK SCO	email	28-May	08-Jun	09-Jun	09-Jun	09-Jun	11-Jun
UK	DCF web site	17-Jun	17-Jun	01-Jul	01-Jul	01-Jul	05-Jul

List of data deficiencies, inconsistencies and manipulations observed by JRC while uploading data base A of landings and discards

Belgium data base A Catch revised:

There are 68 records with area code 7j, whereas the acceptable codes are 7j EU or 7j RFMO. No entries for NO_SAMPLES_DISCARDS, NO_LENGTH_MEASUREMENTS_DISCARDS,

NO_AGE_MEASUREMENTS_DISCARDS, NO_SAMPLES_CATCH, NO_LENGTH_MEASUREMENTS_CATCH, NO_AGE_MEASUREMENTS_CATCH, MIN_AGE, MAX_AGE. No information provided for *_Mean_lengh_Landed, *_No_Discard, *_Mean_Weight_Discard, *_Mean_lengh_Discard for any age. (In addition, my tool indicated almost 2500 wrong codes for species, SKA, MEG, BLL, RJC, …). All data revisions confirmed.

Danish data base A Catch revised:

All years 2000-2009 reported in all areas. No special conditions other than DEEP are specified. Data are considered ready for upload.

English data base A Catch revised:

There are 240 records with not valid area codes for specific condition IIA83c, namely 7e, 7g, 7h, 7j EU, BSA. The value of the attribute SPECON was corrected to none for these records. There are 35 records with not valid area codes for specific condition IIA83d, namely 6b EU, 7e. The value of the attribute SPECON was corrected to none for these records. There are 2259 records with not valid area codes for specific condition IIA83f, namely 6b EU, 7b, 7e, 7f, 7g, 7h, 7j EU, BSA. The value of the attribute SPECON was corrected to none for these records. There are 9 records with not valid area codes for specific condition IIA83g, namely 7e, 7f. The value of the attribute SPECON was corrected to none for these records. There are 90 records with not valid area codes for specific condition IIA83i, namely 7f, 7g, 7h, BSA. This special condition doesn't apply to these area codes. The value of the attribute SPECON was corrected to none for these records. There are 164 records with not specified area (Other) for specific condition DEEP. The value of the attribute AREA was corrected to none for these records. There are 335 records with not specified area There are 3,370 records with area code BSA and specific condition DEEP. Considered ready for upload.

Estonia data base A Catch revised:

Only 2009 data submitted. Given that the area classifications and the vessel size classifications in the Baltic Sea have changed compared to last year's data call, the total time series requested 2003-2009. Only landings of the species COD and PRA, while the data call covers 122 species. No discards and no biological data are reported. Gill 110-149 in the Baltic was replaced with Gill 110-156 (6 records). Pel_trawls bacoma 100-119 were replace with >=105 (2 records). Considered ready for upload.

Finish data base A Catch first revision:

Landing figures are not specific by area, gear, quarter, mesh_size ranges and special conditions. Vessel length categories are inconsistent. Few discard figures are reported but no additional biological. Data not uploaded as generally inconsistent with the required formats.

France:

Data delivered are for 2000-2008. 2009 data are announced to be delivered by 27 September. No discard data are delivered. Vessel length codes "015m" were converted to "o15m" and "010t15m" to "o10t15m". Area codes "8DEU" and "8EEU" were corrected to "8D EU" and "8E EU". Small spaces in other codes were corrected also. There are 4,175 records with BSA and DEEP (no action needed). There are 7,295 gears with small_beam code which were replaced with BEAM. There are 1,131 and 4,825 records with area 7 and 8, respectively (remain unclear). There are 6 records with 3a (remains unclear). There is 1 record with are 3 and there are 4 records with 3c (remain unclear). There are 1,306 records with mesh size but "none" gear. Mesh size is replaced with "none". There are 426 records with Trammel and Specific Condition IIA83g and mesh size code above 110 or none. Special condition is replaced with "none". There are 72 records with wrong mesh size code >16, replaced with "none". There are 21 records with wrong mesh size code 60-69 for gear OTTER, replaced with "55-69".

German data base A Catch:

All years 2003 to 2009 for the Baltic Sea, all other areas only 2009 submitted. Vessel length codifications o15, o40 and o12t18 were corrected to o15m, o40m and o12t18m. Gear code MIS is replaced with none (1,155 records), for these records the mesh size codes were set to none, 4 records with area 12 were replaced to area 12 RFMO (wrongly coded by the data call). No vessel size categorization in 3an, 3as and 4 in 2003-2008, only for 2009 all areas are considered. Pel_trawl >=120 in the years 2003-2008 with special condition IIA83d were corrected to none (15 records). Pel_trawl 100-119 in the years 2003-2008 with special condition IIA83d were corrected to none (7 records). 30 records with area 34.3.1.1 will be ignored. Considered ready for upload. Landings of u8m and u10m boats were submitted on 14 September 2010 and uploaded on 15 September 2010.

Irish data base A Catch:

All years 2003 to 2009 submitted. Revised in order to correct discards. Specon CPOTHER was replaced with none. Considered ready for upload.

Latvian data base A Catch:

All years 2003-2009 submitted. Only Baltic areas covered in the data. No vessels u8m and no o10t12m. Considered ready for upload.

Lithuanian data base A Catch:

Only 2005-2009 submitted, not for 2003 and 2004. 2009 resubmitted. Only vessels o12t18m and o24t40m in Baltic areas are covered. Only cod catches are reported. One record with longline and mesh size range 110-156 was corrected to none. Considered ready for upload if no revision provided.

Netherlands data base A Catch:

Only year 2009 reported. No special conditions were defined, also no DEEP attached. Biological data cover on discards cover plaice and sole only. Few records with discards N/A were replace with -1. Earlier years are covering only North Sea and cod, plaice and sole. Considered ready for upload.

Polish data base A Catch

The file has many inconsistent field names as compared with the format described in the data call. Data cover the years 2004-2009, no data for 2003. Only cod discards and biological data submitted. Considered ready for upload.

Portuguese data base A Catch

All years 2003 to 2009 reported. No biological data apart from hake discards. Considered ready for upload.

Scottish data base A Catch

All years 2003 to 2009 submitted. There are 1,161 records with wrong combination no defined area or are BSA and special condition DEEP. These records would be ignored in the analyses or should be deleted as DEEP records are already duplicated for all other areas than BSA. Specon CPOTHER was replaced with none. Considered ready for upload.

Spanish data base A Catch

All years 2002 to 2009 submitted. Only areas 8c and 9a submitted. No vessel length categories identified. No special condition DEEP attached. 1,087 records with gears none and special condition IIB72ab were corrected to none as the special condition is gear specific. 168 records of BEAM trawls with special condition IIB72ab were corrected to none as BEAM is not considered a regulated bottom trawl. 2,415 records of mesh size '10-30 were replaced with 10-30. All gears none with mesh size were corrected to mesh size none (578 records). Dem_trawls with mesh size none and special condition IIB72ab (34 records) and with mesh size <16 (20 records) and with mesh size 16-31 (2 records) were corrected to special condition none. Dredges without mesh none and special condition IIB72ab (2 records) were corrected to special condition none. Gill nets with mesh size none and special condition IIB72ab (952 records) and with mesh size 10-30 (530 records) and with mesh size 31-49 (275 records) and with mesh size 50-59 (259 records)were corrected to special condition none. Otter with mesh size none and special condition IIB72ab (315 records) and with mesh size <16 (393 records) and with mesh size 16-31 (13 records) were corrected to special condition none. Pel_seine (506 records) and pel_trawl (2 records) with special condition were corrected to none for all mesh sizes. Pots with special conditions were corrected to none (390 records). All trammel nets with special conditions were corrected to none (4,032 records). All discards were deleted (reset to -1) as there are unreasonable values reported. 2002-2009 8c and 9a otter hake discards were calculated using the 2010 ICES WGHMM respective discard rates.

Swedish data base A Catch

All years 2003 to 2009 for the Baltic Sea, all other areas only 2009 submitted. There are 4 records with not valid mesh size (90-99) for otter in area 25 and specific condition Bacoma. The mesh size was changed to >=105. There are 58 records with specified mesh size for unspecified gear. The mesh size was changed to none. Considered ready for upload.

UK without Scotland data base B Effort

All years 2003-2009 are submitted. 2633 records outside the cod zone (6b EU, 7b, 7e, 7f, 7g,7h, 7j EU) were assigned special conditions IIA83c or IIA83d or IIA83f or IIA83g or IIA83i. 164 records with area other will be ignored. 3,370 records with area BSA and the special condition DEEP will be ignored.

The following are Member State descriptions of data submitted.

Belgium: Belgium provided fleet specific landings data for 2003-2009 derived from official logbook databases for all vessels ≥10 meters. The data covers all areas in which the Belgian fleets are active and conforms to the requested aggregation, by quarter, area, gear and mesh sizes.

The species provided are: anglerfish, brill, cod, dab, haddock, hake, lemon sole, Nephrops, plaice, saithe, pollack, sole, skates and rays, turbot and whiting. The age composition on landings for sole and plaice in ICES subdivisions IV, VIIa, VIId, VIIfg and sole in subdivision VIIIab have been provided by quarter for the Belgian beam trawlers. The total number of samples, as well as numbers aged and length measurements by quarter have been apportioned in the same ratio as total quarterly beam trawl fleet landings to annual landings.

Discard data for 2004-2009 were provided from the Belgian Beam trawl fleet for the following species: anglerfish, brill, cod, dab, haddock, hake, lemon sole, plaice, saithe, sole, skates and rays, turbot and whiting. The areas covered are 4, 7a, 7d, 7e, 7f, 7g, 8a and 8b. Belgian discard data represent all ages without disaggregation by age. Information by area for all observer-trips during the year has been merged together, giving an annual percentage of discards estimate per species. The annual estimates of discard rate have been assumed to apply in each of the 4 quarters.

There is no information on misreporting. The landings in the database are based on combined information of logbook data and sale slips. The actual landed weight is split according the logbook information on hours fished in the respective rectangles.

As Belgium does not have trip-by-trip information on the true mesh size for its fleets for 2003-2006, Belgium (as well as other countries) agreed to assume certain mesh sizes for its beam trawler fleets.

Beamers operating in the Bay of Biscay (VIIIa,b) were assumed to use a 70-79 mm mesh size as this is the minimum legal mesh size in that area for beamers. For the North Sea, the trips were split according to the rectangles reported in the logbooks, and mesh sizes were allocated in line with Council Regulation (EC) N° 2056/2001. This regulation stipulates that beam trawlers are prohibited to use less than 120 mm in ICES Division IV to the north of 56° 00' N. Therefore all beam trawl information from this part of ICES Division IV was accounted against an assumed >120mm mesh size. The same regulation also stipulates that within the rectangle with coordinates along the east coast of the UK between 55° 00' N and 56° 00' N and the points 55° 00' N – 05° 00' E and 56° 00' N – 05° 00' E, beam trawlers can use 100 to 119 mm mesh size. Here also it was assumed that the mesh size used by the Belgian Beam trawl fleet was 100-119 mm. For the rest of ICES Division IV (the southern part) a mesh size of 80-89 mm was assumed for the beam trawlers. Apart from these assumed mesh size which are based on rectangle information from logbooks, it was also assumed that the shrimp fishery used a mesh size of 16-31 mm. The mesh size of the beam trawl fleets in the other area's was assumed to be 80-89 mm. Since 2007 mesh sizes used by beam trawls operating in different areas have been based on the true mesh sizes used on each trip.

The Belgian gear categories are: beam, dredge, gill, longline, otter, and trammel. For trammel nets, no assumptions of mesh sizes were made. No special conditions were allocated to any Belgian fleet category until now as no Belgian vessel applied for any special condition in any year since the special conditions have been introduced.

Denmark: Denmark provided quarterly landings data for 2002-2009 for the areas North Sea, Skagerrak and Kattegat in the required data format, and covering 39 species. The Danish data include all trip information from vessels both above 10 m (with mandatory logbook submision) and below 10 m (with declarations of fishing area ("farvandseklæring") and being allocated an effort of 1 (one) fishing day. Landings information comes from the sale slips register. Age distribution data were provided for cod, haddock, plaice, sole and saithe 2003-2009. Numbers of samples for landings by species/fishery were provided according to the requirement. Discards data were provided for Kattegat, Skagerrak and North Sea. However, the Danish discards sampling program is structured according to national fisheries definitions, which do not cover the same level of precision as landings data with regards to mesh size (categories available are Danish Seine, *Nephrops* trawl and Demersal trawl). The number of samples within each stratum is considered too low to be further broken down to the requested mesh sizes categories. Therefore the Danish discards data were not included in the database. There is no quantitative information on misreporting,

France: Landings data by derogation to the mixed fishery database from 2000 to 2008 were updated for all areas, species and gears. Data by age has been provided for whiting and saithe for the same period.

Discards samples have not been raised to the total French fishery. The level of sampling being rather weak for most of the fishery and the variability high from one trip to another, it has not been possible so far to raise the samples to the total fishery.

These results are to be treated with caution at the present time considering the high degree of uncertainty arising from the low sampling level. Furthermore, these results do not take into account the possible differences between métiers.

Germany: Fleet specific landings and estimated discard data were provided for 2003-2009 derived from official logbook data covering all vessels ≥10m for the years 2003-2009. For 2003 to 2008 data are not split in vessel length categories as outlined in the data call for the North Sea area. For the Baltic information for vessels >=8m is provided and for the vessel length categories outlined in the data call. For 2009 also some information for vessels <10m in the North Sea are provided. These information, however, do not cover all vessels in this category as logbooks are not mandatory for these vessels. An extra table is provided for vessels <10m (North Sea) and <8m (Baltic) based on landings declarations from these vessels in a more aggregated format. All data provided do not include unallocated landings. The estimation of discards is based on about 20-30 observer trips per year and the ratio between observed catch and discard weights (sec 5.6). Age compositions of the landed or discarded catches are given where data were available. The data

consider the aggregation by quarter, area, gear, mesh size, and existing derogations including special conditions of 8.1.a, 8.1.c, 8.1.d, 8.1.e and 8.1.f for the years 2003-2008 and species requested. During 2000-2008, the fleets did not apply or have been eligible for other special conditions as confirmed by personal communication with the control and enforcement institute (BLE). For 2009 the special conditions from the new cod management plan are used.

Ireland: : Ireland provided fleet specific landings data for 2003-2009 derived from declared landings within the national logbook database (IFIS) for all vessels ≥10 meters in length provided by the Department of Agriculture, Fisheries and Food. Operational landings information was used in order to provide landings data within the Biologically Sensitive Area (BSA) as requested within the data call. Landings for vessels under 10 meters are not required to complete logbooks. Landings data from these vessels are obtained from monthly reports. These reports provide the species live weight by ICES area landed into ports each month. No vessel, gear, or effort information is recorded. There is some doubt as to the accuracy of these monthly reports. The data covers all areas requested in the STECF-SGMOS data call in which the Irish fleet is active. All species requested by the group landed by Irish vessels have been included. The landings data conforms to the requested aggregation, of quarter, area, gear, mesh size, and species.

The data call requested detailed area information (e.g. coast, RFMO, EU). It was not possible to aggregate data at this level of spatial detail. Detailed areas were assumed. Where an EU category existed within an area, all data from that area was categorised as EU, with the exception of ICES division X assumed to be RFMO. Those ICES divisions without an EU category where assumed as 1 coast, 2 coast, and 12 RFMO.

No special conditions were allocated to Irish fleet categories as no Irish vessel applied for the special conditions relating to Annex IIa (Council Regulation 40/2008) since the special conditions were introduced. Those special conditions applied for by Irish vessels relate to the allocation of additional days at sea for enhanced observer coverage. During quarter 4 of 2009, 3 vessels availed of additional effort under an Irish Article 13 scheme within the Irish Sea (VIIa), effort under this scheme has been marked as "CPart13". Additional effort was claimed under Article 13 where vessels operated west of the "French line" (2.d), however it was not possible to assign such effort to special condition "CPart13" due to unavailability of 2009 VMS data at the time of data submission. All other Irish effort deployed within cod recovery plan areas was assigned special condition "CPother".

Landings information was also provided by BSA, labelled as such within the area field. It should be noted that landings from this area are also contained within the relevant ICES areas. Furthermore, deepwater landings have been provided, classified as "DEEP" within the special conditions field. Landings were identified as deep when vessels carrying out individual trips retained 100kg or more of aggregated deepwater species (Annex I of Council Regulation 2347/2002), regardless of permit status. In addition, the group agreed to include trips where the aggregated Annex I species represented greater than 35% of the total trip landings as deepwater. These landings are a duplication of landings within the relevant areas.

There is no quantitative information on misreporting. Revisions have been made to the 2003-2008 data provided to STECF-SGRST in 2008. These revisions result from a combination of data availability updates and database improvements.

Irish biological landings information (age, lengths, and weights), data was extracted from the Irish port sampling database (STOCKMAN). Gear mesh size is not recorded in the STOCKMAN database, however the vessel name and landings date are. With this information it was possible to re-construct the mesh size data from the logbooks database. If a trip falls into multiple division/gear/mesh classifications, the biological data of that trip will be assigned to only one classification (chosen at random; the first record to appear in the database). Samples are raised to the landings using the sample weights. The sample weights were estimated using length-weight relationships for each species (estimated for all quarters and areas within each year). Numbers-at age were estimated by applying age-length keys (ALKs). The ALKs are built up from aged fish from the relevant year, quarter and division. Gear and vessel parameters are not considered. Length classes with missing ages were filled in firstly by checking for data in different quarters (within a division), next by checking for data in different division (within a quarter) next by checking for data in different divisions *and* quarters and if gaps still exist they are filled using an automatic procedure based on methods described in Gerritsen *et al.* (2006). This filling-in of gaps in the ALK is fully automatic and may not be appropriate in all cases (e.g when there are differences between areas or quarters or when age data are very sparse). The aged sample numbers given are the number of fish used for the ALK (excluding the individuals that were used to fill in gaps).

Discards and biological discard information were extracted from the Irish discard database. To ensure consistency with landings information, technical details (including mesh size) of discard observer trips were re-constructed from the logbooks database. If a trip falls into multiple division/gear/mesh/quarter classifications, all the discard data of that trip will be assigned to each classification. It is therefore not possible to add up data from all classifications to estimate total discard weight or numbers. Also note that not all classifications are sampled and the ones that are sampled usually only have one trip.
Discard length frequency distributions for each species are raised in a number of steps: 1) Raising to the haul level by estimating the sample weight from fixed length-weight relationships for all species in the sample and using the skipper's estimate of the total catch weight. 2) Raised to the trip level, using the number of hauls that were sampled over the total number of hauls of that trip as a raising factor. 3) Raising to the division/gear/mesh/quarter classification using the total number of trips in each classification. Again, when a trip covers more than one classification, each classification will count as one trip. Numbers-at age were estimated by applying age-length keys (ALKs). The ALKs are built up from aged fish from the relevant year, quarter and division. Gear and vessel parameters are not considered. Length classes with missing ages were filled in using an automatic procedure based on methods described in Gerritsen *et al.* (2006). This filling-in of gaps in the ALK is fully automatic and may not be appropriate in all cases (e.g. when there are very few age data). If no individual weight data was available, the discard weight was estimated from the raised length frequency distribution using a fixed length-weight relationship for each species.

Latvia: Latvia provided quarterly landings data for 2003-2009 derived from official logbooks which are stored in national data base for all vessels ≥ 12 meters for the Baltic Sea in the required data format. The data do not include unallocated landings. Estimated discard data were provided for 2003-2009. The estimation of discards is based on about 40-60 observer samples per year and the ratio between observed catch and discard weights on the basis of discard samples.Fleet segments with total overall length u8m, o8t10m and o10t12m are engaged in coastal Fishery. "Coastal fishery logbook" before 2009 are not linked to the vessels, but to fishing company or individual fisherman, so the data concerning the landings for segments less than 12m in coastal fishery can't be divided by vessels and the data can't be provided by requested format. The data on this vessel category (less than 12m in coastal fishery) may be provided without division by fleet segments.

Netherlands: The Netherlands supplied landings data for quarters 1 to 4 in 2009 for 39 species in 22 different SGDFF areas. Data for all three vessel length categories were supplied (u10m, 10m-15m, and o15m) where possible for all métiers in the Dutch fleet. Numbers at age by sex, weight at age, length at age data were supplied for sole, plaice, turbot, brill, cod, herring, mackerel, blue whiting and horse-mackerel since comprehensive market sampling programs exist for these species only. In the Dutch market sampling program ages are sampled directly. Every fish in every sample is both weighed and aged. Sampling is stratified only by market category if applicable (ie. applicable if species are sorted into market categories at auction prior to sampling taking place). Trips are sampled at random from the population of trips with landings. The observed mean weights and proportions at age in the samples per market category are used for raising. The total numbers of landed individuals are estimated to be the ratio of the total landed weight (at each market category) over the mean weight of a fish in the samples (for each market category) and the proportions at age in the samples are used directly to estimate the proportions at age in the landings. Discard numbers at age, mean weight at age, and mean length at age (raised to landings) were supplied for sole and plaice for large (over 15m) beam trawlers working 80-89mm mesh.

Portugal: Portugal provided landings data for 2004- onwards by quarter and year in the required data format for the areas 8c and 9a where the Portuguese fleet operates. Portugal did not provide discards data due to difficulties with the estimation procedure and the short time period of the discards sampling program. Age disaggregated landings were provided for hake, as well as for horse mackerel, mackerel, Spanisch mackerel and blue whiting. The information refers to all fishing vessels with overall length ≥10 m, licensed for the period 2004-2006. The gear categories and mesh size provided were in agreement with the data call and Annex IIB, gillnet with mesh size >60mm, otter trawl with mesh size >32mm and bottom longlines. However, no mesh size information could be provided for significant parts of the fleets deploying the gears defined and contributing significantly to both hake and *Nephrops* landings. In the case of trawl, the unknown

mesh size means that although the mesh size is greater than 32 mm, it is not possible to specify according to the categories defined by this working group, but their landings can be taken into account. The same is not applicable to the gillnets with unknown mesh size. This resulted in a high proportion of gillnet landings which could not be assigned to the defined derogations and therefore were grouped as unknown (none). Special conditions have been provided for a mixed passive gear category ("PGP"), that includes vessels that operate with more than one gear. Although this group includes unregulated gears (trammel nets, traps, dredges, etc.) and regulated gears (longlines and gillnets) affected by the special conditions, it was not possible to consider the gear specific landings in the evaluation and they were added to "none". The trawl fleet was further allocated to two fisheries, targeting crustaceans operating in area 9a or targeting demersal fish operating in areas 8c and 9a.

Spain: The source of data is estimations made from logbooks (all vessels ≥10 meters). 2000 and 2001 data are not provided since they are not very reliable; logbooks cover and quality were not very high in those years, these aspects have improved each year along the period. Gulf of Cadiz was excluded through the port of landing data for Annex IIB dataset; results were successfully cross-checked with Working Group on Hake, Megrim and Monkfish information. Drift longline is an Annex IIB unregulated gear, therefore in this annex dataset is codified as gear "none". The gear category "none" includes also and overall trolling and hand lines and "unknown gears" of which main landings are also from small pelagic and tuna. 2002-2009 landings and 2003-2009 discards data are provided by quarter, gear, mesh size range, area and special condition.

In some cases, a part of the landings of a species could be included in logbooks in its genus or family category (*Argentina spp, Lamna spp, Molva spp, Scomber spp., Squalus spp and Thunnus spp*) and that information keeps hidden. In a list of cases the requirement asks for a species of a genus when the main species of that genus in ICES Divisions 8c and 9a is other (*Argentina sphyraena, Galeus melastomus, Microstomus achne, Trisopterus luscus and Urophycis chuss*). Only the species of the requirement are presented.

2003-2008 discards have been raised again to the new landings data set. For 2009 discard quarterly effort estimation was used for raising purpose. Discard estimation 2003-2008 were raised by landings, as commonly was practiced till 2008 in Spanish discard raising procedure, while since 2009 discards data were raised by effort due to 2007 ICES WKDRP recommendation and to the métiers effort values availability. Empty cell in discards means "no information", zero in the cell means that that stratum has been sampled and the discard obtained is zero. In order to raise 2003-2009 discards data, landings were split by métier where it was necessary (determined species and quarters) using the information obtained in the discard sampling program. So, bottom trawl was divided in métier "baca" (OTB-MIX-DEM-8c9aN), that targets demersal species, métier "jurelera" (OTB-HOM-8c9aN), that targets basically horse mackerel, and métier "pair bottom trawl" (PTB-WHB-8c9aN), that targets blue whiting and hake. Normally discard sampling is designed (and discard information raised) by year and metier (8c + 9a) level, not at quarter and ICES Division level, that is the reason why discards weights could be different from those presented in other forum (e.g. 2010 hake benchmark). The division of fleet in special conditions or not is not taking into account either in the discard sampling design due to no available information. Discards information for gillnet is available only for 2008 and 2009 in 8c ICES Division in quarters 3 and 4. As mentioned, 2003-2008 discards data were raised by landings, while 2009 discards data were raised by effort. The result of this process provided discard data with huge fluctuations, therefore discard data were deleted. 2002-2009 8c and 9a otter hake discards were calculated with 2010 ICES WGHMM respective discard rates.

Numbers at age are not provided for hake and Norway lobster since there is no consensus nowadays about their age reading (see February 2010 STECF Hake Benchmark and 2009 ICES WGHMM). Numbers at age are provided for anchovy, blue whiting and mackerel for 2003-2008. Numbers at age are not provided for anglerfish, megrims and horse mackerel. There is no consensus about anglerfish age reading (see ICES 2009 WGHMM). Respect to megrims and horse mackerel, the requirement asks for the information at genus level, so numbers at age for those species are not provided. The age sampling is not designed by the strata of special condition, since nowadays we do not know from what vessel the otoliths come. Numbers at age are provided for anchovy, blue whiting and mackerel for landings and discards for the gears in which these species are more important. There are no ages for those species for 2009 because their assessment WGs are in June and their data are not made yet. There is no information about anchovy in 2007, 2008 and 2009 since the fishery was closed. Numbers at age are not provided for hake, Norway lobster and anglerfish because

there is no consensus about their age reading. Numbers at age are not provided for megrims and horse mackerel, since the requirement asks for the information at genus level for those groups and age information is species level information.

NO_SAMPLES_LANDINGS is the number of length samples and NO_SAMPLES_DISCARDS is the number of sampled trips, therefore both data were not added in NO_SAMPLES_CATCH. The NO_AGE_MEASUREMENTS_DISCARDS is "-1" since there are not specific discards age-length keys. Regulation states that otoliths from discards must be collected when discards individuals have a length that is not represented in landings length distribution. In the case of horse mackerel, landings and discards have the same length distribution. In the case of mackerel is not possible for the observer to make a correct collection of discard otoliths on board (make the assembly in Eukitt and drying).

Sweden: Sweden provided catch data in the required data format for cod, *Nephrops* and plaice for the years 2003-2008, by quarter, for the areas: Skagerrak and Kattegat. However, as the by-catch data for other species could not be identified by quarter, all Swedish catches were assigned to be taken during the first quarter. STECF-SGRST notes that this data manipulation prevents any analyses by quarter. Age distribution data were provided for cod, plaice and *Nephrops* (both for the retained and the discarded part of the catch). Data for special conditions were available only for special condition IIA81b in Skagerrak for 2004, 2005, 2006 . The gear categories used for are otter trawl 90-99mm, split into *Nephrops* - demersal fish and *Nephrops* trawl with sorting grid (IIA83b). For 2006 data covered the gear category of gill nets of the mesh size range 110-149mm. Mesh sizes were stratified according to requirements. No catch data were provided for vessels <10m. In Sweden, landings of cod were prohibited during parts of 2003, 2004, 2005 and 2006 which resulted in discard of adult cod. There is no information on misreporting.

In 2007, Sweden provided catch data for the special condition aiii AII 83a, (90 mm trawl with 120 mm square mesh panel).

UK (England, Wales and Northern Ireland): The raising procedure used by the UK (England, Wales and Northern Ireland) for 2008 has changed significantly from previous years and data have been reworked for the entire period of 2002-2008.

Landings and effort data were retrieved by The UK Marine Fisheries Agency (MFA) on a year, quarter, species, area, gear, mesh, special condition basis. Length compositions for the landings and discards came from the discard sampling. Comparisons of the length compositions from the market sampling and the discard sampling programmes for the major stocks showed generally good correspondence. There is no guarantee that either the market sampling, or the discard sampling gives the "true" LD.

ALKs for landings were created on a year, quarter, species, area basis from the market sampling data. The same strata were used for discard ALKs but the data came from the discard sampling programme. Annual versions of the ALK (i.e. year, species, area) were created for filling in missing values.

Missing values in the retained portion of the ALK (i.e. lengths observed for which no age data exist) were filled first using the annual retained ALK, then the quarterly discard ALK then the annual discard ALK. Missing values in the discarded portion of the ALK were filled using the annual discard ALK, then the annual retained ALK. Strata were only considered to have sufficient age data if more than 80% of the fish measured had associated ages. Those strata with less than 80% aged result in the provision of landings and discards biomass only. In those strata considered well aged, lengths for which there was no associated age were ignored. Numbers retained and discarded at age were raised up such that the retained biomass equalled the landings recorded in FAD (the official system for recording landings information in England and Wales. Discard data were also ignored if the retained biomass of a strata was less than 0.02% of the total landings – these strata are presented with landings biomass only. For those stocks with no observed discards (or insufficient data), the final table contains only landing information.

UK (Scotland): UK (Scotland): Landings data were provided for the years 2003-2009 for all species caught by Scottish vessels specified in the STECF data requirement. The data conforms to the aggregation by quarter, area, gear and mesh size as set out in the data request. Fisheries are defined using a combination of gear, mesh size and fishing area as set out in the STECF data requirement. Landings and discard numbers at age were derived from market sampling and discard sampling data and the data was stratified by west coast (division VIa) and east coast (sub area IV). In reflection of the changes arising from the new EU Data

Collection Regulation (R(EC) No 199/2008), a different approach was adopted to estimate the age distribution and discards data for 2009 from that used for 2000 to 2008.

For 2000 to 2008, if data was from landings from one of the two areas above and if the gear category could be matched to FRS specific gear codes, catch and discard numbers at age were supplied for cod, haddock, whiting and saithe. For landings from other areas (including all areas in Southern Shelf waters), other types of gear, and in all cases for other species, only landed weight was provided for the given category. Landing numbers at age were calculated from (landed weight in the record *proportion of quarterly landed weight represented by age A)/(mean weight-at-age A). Discard numbers at age were calculated from (landed weight in the record * proportion of quarterly discarded weight represented by age A * ratio of quarterly discards to landings)/(mean weight of discards at age A). The market and discard sampling data files were produced according to the following categories

• MTR: Motor trawl (bottom trawls, boat length >= 27.432m, targeting demersal

species)

• LTR: Light trawl (bottom trawls, boat length < 27.432m, targeting demersal species)

• PTR: Pair trawl (all pair trawls targeting demersal species)

• SEN: Seine nets (single and pair)

• NTR: Nephrops trawls (all trawls targeting Nephrops)

Therefore, even though landed weights were differentiated according to the data specification of this sub-group no distinction could be made between mesh size categories in terms of proportions at age in the landings and discards, or between mesh size categories in terms of the ratio of discards to landings. In addition, age-length keys were pooled for LTR, NTR and SEN such that the age/length relationship will be common across these gears. For data up to 2008 Scottish discards were raised using a stratified ratio estimator, with the strata being defined by gear type, area (i.e. areas defined in the Scottish market sampling scheme) and quarter (January – March, April – June, …). The auxiliary variable used in the ratio estimator was species landings. Due to the expensive nature of discard sampling many strata were unsampled. This problem was overcome by adhoc fill in rules – inshore light trawl data might have been used to fill in an empty inshore Nephrops trawl stratum for example. The estimates of discards for each stratum were then summed to give an estimate of total discards, by area and gear if required. There are known problems, however, with bias and imprecision with this method.

For the 2009 data, biological data was aggregated within Marine Scotland Science according to new metiers (consistent with the EU data collection framework regulation R(EC) No 199/2008). The data was only available for cod, haddock and whiting. For the east coast data was available for the categories

DEF : Demersal otter, demersal seine and beam trawls targeting demersal fish

CRU : Demersal otter, demersal seine and beam trawls targeting crustaceans

For the west coast data was only available for these two gear types combined. If a gear category according to the data specification could be matched to one of these gear codes catch and discard numbers at age were supplied for cod, haddock and whiting. For landings data information was available by quarter. Landing numbers at age were calculated as described above. For discard data only annual information was available. Comparisons of discard ratios can not therefore be made between quarters. To provide data in the format requested discard numbers at age were calculated from (landed weight in the record * proportion of annual discarded weight represented by age A * ratio of annual discards to landings)/(mean weight of discards at age A). Numbers and weight of fish discarded at age are only valid if the quarterly data is aggregated to provide annual totals. In addition, and as was previously the case with Scottish data even though landed weights are differentiated according to the data specification no distinction can be made between mesh size categories in terms of proportions at age in the landings and discards, or between mesh size categories in terms of the ratio of discards to landings. For landings from other areas (including all areas in Southern Shelf waters), other types of gear, and in all cases for other species, only landed weight was provided for the given category. Adhoc fill ins are no longer performed.

For comments on incorporation of special conditions see the UK (Scotland) paragraph under section 5.2.2.

5.2.5. Fleet specific landing and effort data 2003-2009 of small boats (<10m)

Belgium: Belgium did not provide any information for vessels under 10m.

Denmark: Landings and effort data for vessels less than 10m were made available by Denmark in the same format as for larger vessels. Vessels of size less than 10 m are included in the general Danish vessel register database together with the vessels > 10 m (for which logbooks are mandatory). Landings from the small vessels are however recorded through a sale slips register as for vessels > 10 m, and information on the effort of vessels < 10 m is provided through declarations of which area the fishing trip took place ("farvandserklæring"). The level of effort is estimated as one fishing day per registered trip, as most vessels engage in day-trip fishery. This is the basis for the data on landings composition and fishing area by these vessels. Gear and mesh size is often missing, and no information is provided on the ICES rectangle level. On a national scale, the number of small vessels registered in the database has been fairly constant around 850 vessels since 2000, while in comparison the number of vessels larger than 10m has decreased regularly from 1100 vessels in 2000 to 760 in 2006.

France: France provided data for vessels under 10 m for the period 2003 to 2008. All vessels registered in the national Fleet Register have to submit a declaration. Small vessels less than 10 meters are not obliged to complete logbooks but they have to submit a monthly form. These data are stored in the national data base in the same way as for other vessels (> 10 meters).

Effort data are calculated from declarative sources listed above. They were validated by cross-checking with a national sampling for monthly activity calendar. All fishing vessels are sampled directly or indirectly to assess the metiers they have done during the previous year.

Germany: Germany provided aggregated data regarding the fleet of vessels <10m. The data cover landings by area and species and effort in terms of number of vessels. However, no mesh size information is available from the landings declarations given in the years 2004-2008. The data are evaluated in section 6.7.2.

Ireland: Ireland provided data for small vessels of less than 10 meters in length for the period 2003-2008. Attempts are underway to construct an accurate list of these small vessels, which at present stands as approximately 1284 registered vessels, of which around 600 or so hold polyvalent pot licences.

Vessels less than 10 meters are not legally required to complete logbooks, therefore data of limited detail is available. Landings data from Irish vessels under 10 meters are obtained from monthly reports. These reports provide the species live weight by ICES area landed into ports each month. No vessel, gear, or effort information is recorded. There is some doubt as to the accuracy of these monthly reports. However, landings show the main species landed by <10m vessels to be non-TAC, shellfish species. In terms of sampling programs, there are no long-term specific programs like those for over 10 meter vessels. This is partly due to the insignificant landings of TAC species, as well as issues relating to onboard sampling staff safety. However, studies are carried out on specific species or sections of the inshore fleet, including lobster and brown crab, or activity patterns of vessels from certain ports. Landings data are given in aggregated formats within each of the Annex IIA area sections for which landings are recorded for the Irish under 10m vessels.

Monitoring of effort by the small inshore vessels presents difficulties as fishers are not required to record their effort. However, the majority of these small vessels have a daily fishing pattern, leaving at dawn and returning in the afternoon of the same day to land their catch. These are primarily artisanal vessels, not equipped to hold fish on board for long periods. Gear choice of these small vessels is influenced by both home port and local available stocks. The principal methods of the inshore fleet are passive, particularly pots. However, other gears are used including otter trawls and shellfish dredges. The under 10 meter vessels exploit the territorial sea and coastal waters, operating within the ICES areas adjoining the Irish coast (VIa, VIIa, VIIb, VIIg and VIIj).

No information regarding small boats <10m was provided by the Netherlands.

No information regarding small boats <10m was provided by Portugal

Spain: No information about vessels under 10 meters was provided. Annex IIB does not deal with vessels under 10 meters.

Sweden: Effort and landing data for vessels less than 10m were made available by Sweden in the same format as for larger vessels. Vessels <10 m that are using trawl and demersal seines are obliged to use the same logbook as larger vessels. Vessels <10m using other gears are using the "coastal fishing journal" which predominantly follows the same structure as the standard logbook. Sweden reported landings on Nephrops, Cod and Plaice for vessels (<10m) for 2003-2008.

UK England, Wales and Northern Ireland: Data on catch and effort for under 10 m vessels are made available for UK vessels (including England, Wales and Northern Ireland). However, the effort data in particular are likely to be incomplete as there was no obligation for vessels to report effort before mid-2006.

UK Scotland: : The effort data for 2000-2009 are given in a format consistent with the data submissions for bigger boats. Prior to the introduction of UK legislation known as the Register of Buyers and Sellers (RBS) for shellfish in Scotland in early 2006, some effort catching shellfish using POTS and Shell fishing by hand appears to have been under recorded but the data for effort by other gears (those regulated for vessels >10m) shows no change in trend consequent on the introduction of RBS and therefore can be assessed as being complete in earlier years. The effort data supplied for Scottish registered vessels for 2000 to 2008 excludes voyages landing into ports in England and other non- Scottish areas of the UK and incorporated some simplifying assumptions on mesh size to minimise multiple counting of boats. However, from 2009, the data covers all Scottish registered vessels and no simplifying assumptions have been made. Data on number of vessels per category has been supplied. Scottish under 10m boats are known to use more than one type of gear on individual trips or within a quarter, however and multiple counting of boats is therefore significant. The landings data for 2003-2009 are given in a format consistent with the data submissions for bigger boats.

Although UK(Scotland) carry out a stratified sampling observer programme based on gear, area and quarter, no specific consideration is given to estimating discards for vessels in the category of 10 metres or under in length. Vessels in this category are classed in the same groups as vessels over 10 metres in length based on the fishing method rather than vessel size. For a variety of reasons, including Health and Safety, discard sampling staff tend not to sail on vessels in the 10 metre and under category.

In 2003 the Scottish Fisheries Statistics showed landings of the main commercial demersal species from vessels in the <=10 metre category operating in Scotland to be below the level where the sampling intensities as defined in Appendix XV (Section H) of regulation (EC) 1639/2001 (Table 2) requires sampling to be carried out. A pilot study conducted in 2004 comparing a <=10m vessel and >10m vessel using trawl gear and targeting *Nephrops* concluded overall weight discarded per hour was very similar between the vessels. As a consequence regular sampling of the <=10 metre category in relation to landings and discards of *Nephrops* are conducted but the estimation of demersal discards for this category is based on the assumption that all vessels targeting *Nephrops* and operating in the same sampling area have the same catching and discarding characteristics.

5.3. Estimation of fleet specific international landings and discards

The estimation of fleet specific international landings and discards is based on linking the information about fleet specific discards and catch and discards at age among countries and replacing poor or lacking values with aggregated information from other countries.

Reported data by country are aggregated by fleet properties and raised to the officially reported landings or discards in the SGDFF 2004 (ICES 2004) format. Fleet definitions are based on area, year, quarter, gear, mesh size groups, special conditions as defined in Council Reg. 41/2007 Annexes 2A-C and national fisheries (metiers) definitions.

The data management and estimation procedures follow the simple raising strategies outlined below :

- Data management:

  The fleets are classified to their management areas, years, quarters and effort regulated gear groups disregarding the countries and fisheries (metiers).

- Estimation of discard rates by fleet (*DR*):

Let the following notation be: D=discards, L= landings, *snf* = sampled national fleet, *unf* = unsampled or poorly sampled national fleet.

A poorly sampled fleet is defined as such when $SOP_{snf} < 0.75$ or $SOP_{snf} > 1.25$

The available landings and discards are aggregated (summed) by fleets and mean discard rates are calculated:

$$DR = \frac{\sum_{snf} D_{snf}}{\sum_{snf} (L_{snf} + D_{snf})}$$ with $D_{snf} \geq 0$ and with $L_{snf} + D_{snf} > 0$ otherwise 0 (means no catch)

Fleet specific discard amounts are calculated when no discard information is available by

$$D_{unf} = \frac{L_{unf}.DR}{(1-DR)}$$ when D_{unf} is null (empty)

Fleets without any discards information remain as such.

- Estimation of landings in numbers and mean weight at age for non or poorly sampled national fleets

  Let *i* be the age reference

  Landings in numbers ($N_{snf,i}$) and mean weight at age ($W_{snf,i}$) are aggregated by sampled fleets when $SOP_{snf} \geq 0.75$ and $SOP_{snf} \leq 1.25$.

  Raising of numbers and mean weights at ages 0-11 to non or poorly sampled fleets by

$$N_{unf,i} = \frac{\sum_{snf} (N_{snf,i}).L_{unf}}{\sum_{snf} L_{snf}}$$

$$W_{unf,i} = mean(W_{snf,i})$$

  The mean weights are unweighted and an appropriate weighing procedure, i.e. number of fish measured, should be explored.

  Fleets without any landings at age information remain as such.

- Estimation of discards in numbers and mean weight at age for non or poor sampled fleets

  Discards in numbers ($N_{snf,i}$) and mean weight at age ($W_{snf,i}$) are aggregated by sampled fleets when $SOP_{snf} \geq 0.75$ and $SOP_{snf} \leq 1.25$ along the same procedure as for the landings.

  Raising of numbers and mean weights at ages 0-11 to non or poorly sampled fleets by

$$N_{unf,i} = \frac{\sum_{snf} (N_{snf,i}).D_{unf}}{\sum_{snf} D_{snf}}$$

$$W_{unf,i} = mean(W_{snf,i})$$

  The mean weights are unweighted and an appropriate weighing procedure, i.e. number of fish measured, should be explored.

Fleets without any landings at age information remain as such.

An example of this raising procedure is given in Table 15.2.3.2 under the header "Discards", the values between parenthesis are the estimated values.

- Catch at age estimation including discards

  Catches by fleets are estimated as the sum of landings and discards. Missing discards are ignored.

  Catches at ages 0-11 in numbers are estimated as the sum of landings at age in numbers and discards at age in numbers. Missing discards are ignored.

  Mean weights at ages 0-11 are estimated at weighted means (according to ratios of landings at age and discards at age to catches at age).

  Finally, all fleets' catches and catches at ages in numbers and mean weights are aggregated finally over management areas, years and effort regulated gear groups.

  Fleets without any information on discards or landings at age and discards at age remain unchanged and need to be raised separately on an agreed basis in case that they constitute significant landings.

The STECF-SGMOS notes that sampling of catch at sea including discards is expensive and difficult. This means that sampling coverage tends to be rather limited, and estimates of discards are subject to high uncertainty. This is true of all the discard data used here, and in some cases the discard estimates presented represent the first attempt to use the discard data from some fisheries in an advisory context. Where the coverage is considered adequate to estimate the overall catch compositions of specific fleets these are presented, but they are intended only to provide an approximate indication of fleet catch compositions. In cases where there are little data, the estimated discard rates may be biased and imprecise (Stratoudakis *et al.*, 1999). The mean weights are estimated as unweighted means. This results in a biased estimate. An appropriate weighing procedure, i.e. number of fish measured, should be explored.

STECF-SGMOS further notes that the approach of discard estimation applied is generally consistent with the method used in the discard estimates published by the FAO (Kelleher, 2004). However, the group also notes that the design of a discard sampling scheme might differ depending on whether the objective was to estimate total discards, or discard for specific fleets. In the current context estimates from sampling schemes designed for the former purpose are being used for the latter purpose which again means the estimates should only be used with caution. Where this is the case, comparisons are made between the estimates of total discards used for assessment purposes, and the fleet-specific estimates used here.

With regard to age composition data, STECF-SGMOS notes that the analyses presented here are intended to quantify the catch compositions of the various fleets and gears of interest. For this purpose it is the species compositions and the estimated landings and discards that are of primary importance, with the age compositions being only of secondary importance. Applying the age compositions to the national catches by fleet and gear is a complex process not least because it typically involves considerable filling-in to account for categories which do not correspond to those within national sampling schemes. It would make any future data compilation and analyses much more efficient if age composition data were not required. While there is clearly a trade-off between efficiency on one hand and providing additional information on the other, the group notes that in the current context the age composition data add little information. As a result it proposes that any future data requests and analyses should be restricted to age-aggregated information.

5.4. Treatment of CPUE data

In this report, STECF-SGMOS presents CPUE by regulated gears in units of g/(kW*days). Where discard estimates are not available, the trends in LPUE (landings per unit of effort) are given in the same units**.** Unfortunately, discard information continues to be sparse or absent for some categories of gear in some

areas. **STECF wishes to stress again that great care should be used in the interpretation of these data owing to the incomplete nature of information on discarded fish.**

STECF-SGMOS notes that CPUE series are often interpreted and used as stock abundance indicator. However, STECF-SGMOS emphasises that the presented trends in CPUE by fleets are subject to selective fishing strategies (area, gear, mesh size etc.) and thus maybe biased. On the other hand, CPUE derived from targeted fisheries may provide very useful information on stock abundance trends. Furthermore, it must be taken into consideration that the majority of the CPUE trends represent only overall weights in the landings (LPUE) without discards or with poorly estimated discards. Ideally, the CPUE should be based on age disaggregated abundance rather than overall weights and reflect technological creep when trends over longer periods are evaluated.

5.5. Ranking of gears on the basis of contribution to catches

Where required, STECF-SGMOS presented the ranked contributions of the individual regulated gears listed in **Annex I to R(EC) No 1342/2008** to cod, plaice and sole catches for the years 2003 to 2008. There was discussion about whether the ranking should be based on a single recent year (possibly reflecting the most up to date importance of the different gear types in contributing to mortality of these species) or an average for a range of years (which allows for any aberrations in the series). A decision was taken to rank according to 2008. The data for other years are available for alternative analysis in the background spreadsheets.

The catch estimates are based on the sums of the landings and discards where available. STECF-SGRST considers the catch estimates as uncertain where derogations lack discard estimates or they are poorly sampled. The ranking according to catch in numbers only considers derogations for which catch in numbers are available. **STECF wishes to stress again that great care should be used in the interpretation of these data owing to the incomplete nature of information on discarded fish.**

5.6. Summary of effort and landings by 'unregulated' gears

In the summary tables of effort (for example in Section 6.2.1, 6.3.1 etc.) a total value for a 'none' category is provided. This 'none' category represents i) gear types and mesh sizes which are unregulated under Annex I, Coun. Reg. 1342/2008 in addition to ii) unidentified mesh sizes. In the main effort summary tables, this category is not broken down into its constituent gears. However, STECF SGMOS has provided a break down of the main gears within the 'none' category in a dedicated subsection for each area (for example Section 6.2.5, 6.3.5 etc). Information is given on effort (kW*days at sea) for gears such as 'beam', otter, pots, dredges etc, and for catches by these gears of key species (e.g. cod, plaice and sole). This analysis helps to identify which gears contribute significantly to landings of these species but which are not currently regulated.

With the adoption of the revised cod recovery plan towards the end of 2008 and the simplified list of regulated gears for which data are now collated, the compilation of the unregulated categories was more straightforward in 2009 and the data appear to be reliable.

It is important in making use of the data in this report, that the 'none' material is not counted more than once. It would be preferable to use data from the sections covering unregulated gears.

5.7. Presentation of under 10m information

This STECF-SGRST report provides an overview of landings and effort data provided by the experts regarding their national fisheries of vessels <10m, which are not obliged to report their landings through logbooks but rather do landings declarations.

Previously, information on vessels <10m has been provided in the STECF SGRST reports only as a series of individual country reports describing activities and landings. In this report individual country information is again provided where available – new information is provided from several countries. An attempt is also made to compile available information for each area into overall figures. Since not all countries were able to fulfil this part of the data call, the aggregate estimates for each region of the cod recovery zone **must be considered as minimum estimates**. Nevertheless, they begin to give an idea of the scale of landings

contributed by these smaller classes of vessel and can be used to comment on the likely relative importance compared with the regulated vessels.

5.8. Presentation of spatial information on effective effort

STECF-SGRST notes that minimum geographic resolution in the available logbook information on landings and effective effort is by ICES rectangle and considers analyses to only be possible at that resolution at the present time. In a number of the smaller areas, however, this resolution is inadequate for describing any localised changes of effort distribution (for example, in the Kattegat) and finer scale is desirable. Increasing availability of VMS data should provide opportunities for improved resolution in due course. The effective effort values of certain nations were given in days fished which were then converted to trawled hours by applying a factor of 24. STECF-SGRST notes that only major changes in the geographical distribution patterns should be given attention given the imprecision of the created data set. A full set of figures is available electronically but a selection of key gears is included in this report.

Figures use a common scale across years for a given category (e.g. TR1) but scales are unique to each category such that the colours assigned to statistical rectangles for category TR1 can not be compared directly to those assigned for category TR2 say. Figures use a percentiles scale, i.e. number of data values found in each colour band is the same. This is after data values across all years have been combined for that category.

6. REVIEW OF (ANNEX IIA TO REGULATION (EC) NO 43/2009) IN THE CONTEXT OF THE COD RECOVERY PLAN (REGULATION 423/2004)

6.1. General remarks

STECF-SGMOS notes that the 2010 report includes the first full year of the revised cod plan operational in 2009 for the first time. STECF-SGMOS notes that the categories of the new plan are simpler to present. In this case there are a limited number of derogations relating to Articles 11 and 13 of the Council Regulation. For these derogations, member states are required to collect data for the specific vessels involved and summary tables in the report specifically identify these data.

It is, however, the case that configurations of gear adopted to fulfil the requirements of the Article 13 derogation are very variable across the member states are often not registered in the logbook databases, eg *inter-alia*. multi rigging, sorting or escapement devices or in-season management plans. STECF-SGRST notes that in-season information and fleet aggregations imply the direct involvement of the national control and enforcement institutions in the review process. STECF-SGRST recommends that to the fullest extent possible, national logbook data bases be made consistent with both the regulations defined in Annex IIA of the fishing opportunities regulation and the fleet-metier definitions defined under the revised data collection regulation (Council Reg. 199/2008).

For completeness, the historic trends in days at sea up to the end of 2008 are provided below but since the revision of the cod plan and the introduction of member state management of effort pots, EU controlled days at sea per vessel is no longer applicable in cod recovery areas.

Allocations of effort in kW*days per member state and gear type for 2009 under the new cod plan regulations can be found in Appendix 1 to Annex II of Council Regulation 43/2009 (TAC and Quota Reg).

IT IS IMPORTANT TO NOTE THAT LATE SUBMISSION OF THE FRENCH DATA GAVE INSUFFICIENT TIME FOR PROBLEMS TO BE IDENTIFIED AND CORRECTED BEFORE THE SECOND MEETING. THREE SIGNIFICANT ISSUES WERE IDENTIFIED SUBSEQUENTLY:

A) EFFORT DATA FOR 2002 ARE KNOWN TO BE SPURIOUS AND THIS WILL BE CORRECTED FOR THE 2011 MEETING

B) DATA FOR 2009 APPEAR TO BE THE SAME AS WERE SUBMITTED FOR 2008. A CORRECTION CAN BE EXPECTED IN 2011

C) A LATE CORRECTION TO THE FRENCH DATA AFFECTING AREAS IN WHICH THE 'DEEP' SPECIAL CONDITION OCCURRED (eg VIa) MEANS THAT DETAILED FIGURES REPORTED HERE ARE SOMETIMES INCORRECT. Broad trends and general conclusions still hold but for definitive most up to date figures the reader's attention is drawn to the STECF website (link), where these can be found.

Table 6.1.1 Historic trends in days at sea by vessel specified in the Council Regulations since 2003.

Annex	AREA	REG GEAR	SPECON	2003	2004	2005	2006	2007	2008
IIA	2a	4ai	none	276	240	228	228	228	228
IIA	2a	4aii	IIA83b			252	365	365	365
IIA	2a	4aii	IIA83d		365	365	280	280	280
IIA	2a	4aii	none	300	264				
IIA	2a	4aiii	IIA83a			144	137	126	126
IIA	2a	4aiii	IIA83d		365	365	365	365	365
IIA	2a	4aiii	none	300	264	108	103	95	71
IIA	2a	4aiii deleted (2007)	IIA83b				365		
IIA	2a	4aiii new (2007)	IIA83l					132	132
IIA	2a	4aiv	IIA83a			144	137	137	137
IIA	2a	4aiv	IIA83c		168	156	148	148	148
IIA	2a	4aiv	IIA83d		365	365	365	365	353
IIA	2a	4aiv	none	108	120	108	103	103	103
IIA	2a	4av	IIA83a			144	137	137	137
IIA	2a	4av	IIA83c		180	168	160	160	160
IIA	2a	4av	IIA83d		365	365	365	365	365
IIA	2a	4av	IIA83h			120	115	115	115
IIA	2a	4av	IIA83j			144	149	149	103
IIA	2a	4av	none	108	120	108	103	103	103
IIA	2a	4ci	none	192	168	156	140	140	140
IIA	2a	4cii new (2007)	none	192	168	156	140	140	140
IIA	2a	4ciii new (2007) former 4cii	none	192	168	156	140	140	140
IIA	2a	4civ new (2007) former 4ciii	IIA83f		192	180	162	162	162
IIA	2a	4civ new (2007) former 4ciii	none	192	168	156	140	140	140
IIA	2a	4d	IIA83g				140	140	140
IIA	2a	4d	none	192	168	156	140	140	140
IIA	2a	4e	none	228	204	192	173	173	173
IIA	2b	4ai	none	276	240	228	228	228	228
IIA	2b	4aii	IIA83b				365	365	365
IIA	2b	4aii	IIA83d		365	365	280	280	280
IIA	2b	4aiv	IIA83c		168	156	148	148	148
IIA	2b	4aiv	IIA83d		365	365	365	365	365
IIA	2b	4aiv	none	108	120	108	103	95	86
IIA	2b	4av	IIA83c		180	168	160	160	160
IIA	2b	4av	IIA83d		365	365	365	365	365
IIA	2b	4av	IIA83h			120	115	115	115
IIA	2b	4av	none	108	120	108	103	96	86
IIA	2b	4ci	none		168	156	140	140	140
IIA	2b	4cii new (2007)	none		168	156	140	140	126
IIA	2b	4ciii new (2007) former 4cii	none		168	156	140	130	117
IIA	2b	4civ new (2007) former 4ciii	none		168	156	140	140	140
IIA	2b	4d	none		168	156	140	140	140
IIA	2b	4e	none		204	192	173	173	173
IIA	2b1	4aii	IIA83b			252	365	365	365
IIA	2b1	4aii	none	300	264				
IIA	2b1	4aiii	IIA83a			144	137	126	126
IIA	2b1	4aiii	IIA83d		365	365	365	365	365
IIA	2b1	4aiii	none	300	264	108	103	95	86
IIA	2b1	4aiii new (2007)	IIA83l					132	132

Table 6.1.1 continued.

IIA	2b1	4aiv	IIA83a			144	137	137	137
IIA	2b1	4av	IIA83a			144	137	137	137
IIA	2b1	4av	IIA83j			144	149	149	149
IIA	2b1	4ciii	IIA83f				140	140	140
IIA	2b12	4bi	none	180	168	156	143	132	119
IIA	2b12	4bii	none	180	168	156	143	143	143
IIA	2b12	4biii	IIA83c			156	155	155	155
IIA	2b12	4biii	IIA83i				155	155	155
IIA	2b12	4biii	none	180	168	156	143	143	129
IIA	2b12	4biv	IIA83c			168	155	155	155
IIA	2b12	4biv	IIA83e				155	155	155
IIA	2b12	4biv	IIA83i				155	155	155
IIA	2b12	4biv	none	180	168	156	143	143	129
IIA	2b12	4d	IIA83g				140	140	140
IIA	2b12	4d	none	192	168	156	140	140	140
IIA	2b12	4e	none	228	204	192	173	173	173
IIA	2b2	4aii new (2007)	none	300	264	252	227	204	184
IIA	2b2	4aii new (2007)	IIA83c					215	215
IIA	2b2	4aiv	IIA83a			144	103	103	103
IIA	2b2	4av	IIA83a			144	103	103	103
IIA	2b2	4ciii	IIA83f		192	180	162	162	162
IIA	2b23	4aii deleted (2007)	none		264	252	227		
IIA	2b23	4aiii	IIA83a				227	227	227
IIA	2b23	4aiii	IIA83d		365	365	280	280	280
IIA	2b23	4aiii	none		264	252	227	209	188
IIA	2b23	4aiii new (2007)	IIA83l					238	238
IIA	2b23	4aiv	IIA83a				103	103	103
IIA	2b23	4av	IIA83a				103	103	103
IIA	2b23	4av	IIA83j				115	115	115
IIA	2b23	4av new (2007)	IIA83jh					127	127
IIA	2b3	4aii new (2007)	none		264	252	227	221	199
IIA	2b3	4aii new (2007)	IIA83c					227	227
IIA	2b3	4av	IIA83a				103	103	103
IIA	2b3	4bi	none	180	168	156	365	365	365
IIA	2b3	4bii	none	180	168	156	365	365	365
IIA	2b3	4biii	IIA83c			156	365	365	365
IIA	2b3	4biii	IIA83i				365	365	365
IIA	2b3	4biii	none	180	168	156	365	365	365
IIA	2b3	4biv	IIA83c			168	365	365	365
IIA	2b3	4biv	IIA83e				365	365	365
IIA	2b3	4biv	IIA83i				365	365	365
IIA	2b3	4biv	none	180	168	156	365	365	365
IIA	2b3	4ciii	IIA83f				140	140	140
IIA	2b3	4d	IIA83g		240	228	205	205	185
IIA	2c	4ai	none		240	228	228	228	228
IIA	2c	4aii	IIA83b				365	365	365
IIA	2c	4aii	IIA83d		365	365	280	280	280
IIA	2c	4aii	none		264	252	227	204	184
IIA	2c	4aii new (2007)	IIA83c					204	204
IIA	2c	4aiii	IIA83a				227	227	227
IIA	2c	4aiii	IIA83d		365	365	280	280	280
IIA	2c	4aiii	none		264	252	227	227	227
IIA	2c	4aiii deleted (2007)	IIA83b				365		
IIA	2c	4aiii new (2007)	IIA83l					238	238
IIA	2c	4aiv	IIA83a				114	114	114
IIA	2c	4aiv	IIA83c		168	156	148	148	148
IIA	2c	4aiv	IIA83d		365	365	365	276	276
IIA	2c	4aiv	IIA83k				166	166	166
IIA	2c	4aiv	none		120	120	114	105	86

Table 6.1.1 continued.

IIA	2c	4av	IIA83a			114	114	114
IIA	2c	4av	IIA83c	180	168	160	160	160
IIA	2c	4av	IIA83d	365	365	365	365	365
IIA	2c	4av	IIA83h		120	126	126	126
IIA	2c	4av	IIA83j			126	126	126
IIA	2c	4av	IIA83k			178	178	178
IIA	2c	4av	none	120	120	114	114	114
IIA	2c	4av new (2007)	IIA83jh				138	138
IIA	2c	4bi	none	168	156	143	132	132
IIA	2c	4bii	none	168	156	143	143	143
IIA	2c	4biii	IIA83c		156	155	155	155
IIA	2c	4biii	IIA83i			155	155	155
IIA	2c	4biii	none	168	156	143	143	143
IIA	2c	4biv	IIA83c		168	155	155	155
IIA	2c	4biv	IIA83e			155	155	155
IIA	2c	4biv	IIA83i			155	155	155
IIA	2c	4biv	none	168	156	143	143	143
IIA	2c	4ci	none	168	156	140	140	140
IIA	2c	4cii new (2007)	none	168	156	140	140	140
IIA	2c	4ciii new (2007) former 4cii	none	168	156	140	140	115
IIA	2c	4civ new (2007) former 4ciii	IIA83f			140	140	140
IIA	2c	4civ new (2007) former 4ciii	none	168	156	140	140	140
IIA	2c	4d	IIA83g			140	140	140
IIA	2c	4d	none	168	156	140	140	140
IIA	2c	4e	none	204	192	173	173	173
IIA	2d	4ai	none	276	240	228	228	228
IIA	2d	4aii	IIA83b			365	365	365
IIA	2d	4aii	IIA83d	365	365	280	252	252
IIA	2d	4aii	none	300	264	252	227	227	204
IIA	2d	4aii new (2007)	IIA83c				227	227
IIA	2d	4aiii	IIA83a			227	227	227
IIA	2d	4aiii	IIA83d	365	365	280	280	280
IIA	2d	4aiii	none	300	264	252	227	227	227
IIA	2d	4aiii deleted (2007)	IIA83b				365		
IIA	2d	4aiii new (2007)	IIA83j					238	238
IIA	2d	4aiv	IIA83a				91	91	91
IIA	2d	4aiv	IIA83c		168	156	148	148	148
IIA	2d	4aiv	IIA83d		365	365	365	276	276
IIA	2d	4aiv	none	108	120	96	91	84	69
IIA	2d	4av	IIA83a				91	91	91
IIA	2d	4av	IIA83c		180	168	160	160	160
IIA	2d	4av	IIA83d		365	365	365	279	279
IIA	2d	4av	IIA83h			120	103	103	103
IIA	2d	4av	IIA83j				103	103	103
IIA	2d	4av	none	108	120	96	91	85	70
IIA	2d	4av new (2007)	IIA83jh					115	115
IIA	2d	4bi	none	180	168	156	143	143	143
IIA	2d	4bii	none	180	168	156	143	143	143
IIA	2d	4biii	IIA83c			156	155	155	155
IIA	2d	4biii	IIA83i				155	155	155
IIA	2d	4biii	none	180	168	156	143	143	143
IIA	2d	4biv	IIA83c			168	155	155	155
IIA	2d	4biv	IIA83e				155	155	155
IIA	2d	4biv	IIA83i				155	155	155
IIA	2d	4biv	none	180	168	156	143	143	143
IIA	2d	4ci	none	192	168	156	140	140	140
IIA	2d	4cii new (2007)	none	192	168	156	140	140	140
IIA	2d	4ciii new (2007) former 4cii	none	192	168	156	140	140	140
IIA	2d	4civ new (2007) former 4ciii	IIA83f				140	140	140
IIA	2d	4civ new (2007) former 4ciii	none	192	168	156	140	140	140
IIA	2d	4d	IIA83g				140	140	140
IIA	2d	4d	none	192	168	156	140	140	140
IIA	2d	4e	none	228	204	192	173	173	173

6.2. *Regional Area 3a: Kattegat*

All Member States fishing in this area have reported their effort data, including mesh size range category and derogations and the overall confidence in the results are high. However, in 2010 Sweden only updated the previous database with 2009 data, whereas Germany and Denmark re-submitted the full time series. Therefore the old Annex IIa derogations (defined up to the 2009 data call) are still identified in the database up to 2008 for the Swedish fisheries. Denmark did not report in the old derogations, as they were no longer mentioned in the 2010 data call. Therefore the aggregate data reported until 2008 in the specific condition IIA83a differs from the data reported last year. However, the square panel window that qualified for IIA83a derogation is compulsory in Denmark, implying that all trawls using mesh sizes over 90mm use this window.

The total nominal effort in the Kattegat decreased by 38 % between 2002 and 2009, and the total regulated effort has meanwhile decreased by 43% since 2002, and by 13% between 2008 and 2009.

Fisheries in the Kattegat are almost exclusively conducted by Denmark and Sweden (68% and 31% of the total effort in 2009 respectively) using predominantly trawls (around 85% of the total effort, and 95% of the regulated effort), primarily in the gear class TR2 (73% of total effort in 2009). Beam trawls are forbidden. In previous years, there had been repeated reporting of minor Dutch beam trawling in the area. This issue was investigated in 2010, and an allocation error was discovered and corrected. In consequence, there is no more Dutch effort recorded in the Kattegat in this year's report..

The effort deployed by passive gears (GN1, GT and LL1) is relatively small, with a stable share of around 4% of the total effort since 2005. . The amount of unregulated effort (effort that could not be assigned to the existing gear categories) has been re-evaluated upwards since the previous report, with a share of around 18% in 2009.

The specific conditions in use and their uptake have changed in 2009 compared to last year. Only Sweden reported under the derogation CPart11 (in this case achieving the <1.5% cod catch by using a sorting grid) in gear category TR2, and this represented 50% of the effort deployed by this country in this gear category in 2009. It is though in principle now an unregulated gear. However, it is still accounted under the corresponding regulated gears in the tables below, for the matter of comparison and evaluation. Overall, this derogation represented 12% of the total regulated effort in Kattegat in 2009.

The effort deployed in Gross tonnage days (GTdays) and number of vessels are not described in this report but can be found on the STECF SGMOS 10-05 website under the Final Report section: https://stecf.jrc.ec.europa.eu/meetings/2010?p_p_id=62_INSTANCE_Hk1G&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&p_p_col_id=column-2&p_p_col_count=1&_62_INSTANCE_Hk1G_struts_action=%2Fjournal_articles%2Fview&_62_INSTANCE_Hk1G_groupId=43805&_62_INSTANCE_Hk1G_articleId=44677&_62_INSTANCE_Hk1G_version=1.0

6.2.1. Trend in effort by gear group and derogation in management area 2a: Kattegat

Trends in effort by the new cod plan gear groups and by country are shown in Table 6.2.1.1. There are major differences observed in the temporal trends between gear categories and between countries.

Table 6.2.1.1 Kattegat: Trend in nominal effort (Kw *days at sea) by Gear group and country. 2000-2009.

REG AREA	REG GEAR	COUNTRY	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Rel 2002	Rel 2008
3a	**BT2**	DEN	122											
	GN1	DEN	276367	293732	337354	184730	111650	130267	104450	72977	66270	83095	0.25	1.25
		GER	1932	800	11474	13612	14289	26827	38486	39725	31562	23156	2.02	0.73
		SWE	27081	15819	12629	20309	17690	9609	14748	14949	32697	31132	2.47	0.95
	GT1	DEN	16092	21789	17992	15923	14791	28221	24922	12119	11758	23209	1.29	1.97
		SWE	27228	22200	24690	25558	11254	12833	19178	34170	29266	17234	0.70	0.59
	LL1	DEN	711	25397	56410	3240	3080		220			406	0.01	
		SWE	749	2080	3652	5683	1376	10684	27478	37856	25234			
	TR1	DEN	801537	785861	555040	201816	191679	205850	193619	186575	158868	104096	0.19	0.66
		GER	11592	8183	870	894	2390	4985	5262	5526	1964			
		SWE	228992	169826	87451	44370	15121	24870	5160	19799	57592	6985	0.08	0.12
	TR2	DEN	3618520	3795772	3195511	3455075	3059057	2547492	2254222	2026307	2148493	2214066	0.69	1.03
		GER	47841	8581	24240	35966	31861	7505	10318	35338	38716	19918	0.82	0.51
		SWE	1602940	1574981	1273312	1369635	1043622	1046257	1228296	1275042	1227656	851374	0.67	0.69
	TR3	DEN	321677	500477	506912	654355	481725	485616	358274	306240	152411	95897	0.19	0.63
		GER	1989											
		SWE	26138	11329	316					1470		1148	3.63	
Grand Total			**7011508**	**7236827**	**6107853**	**6031166**	**4999585**	**4541016**	**4284633**	**4068093**	**3982487**	**3471716**	0.57	0.87

Table 6.2.1.2 summarises the aggregated effort by regulated cod plan gear categories. TR2 dominates the effort in recent years.

Table 6.2.1.2 Kattegat: Trend in nominal effort (Kw *days at sea) by Gear group, 2000-2009.

REG AREA	REG AREA	specon	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Rel 2002	Rel 2008
3a	BT2	none	122											
3a	GN1	none	305380	310351	361457	218651	143629	166703	157684	127651	130529	137383	0.38	1.05
3a	GT1	none	43320	43989	42682	41481	26045	41054	44100	46289	41024	40443	0.95	0.99
3a	LL1	none	1460	27477	60062	8923	4456	10684	27698	37856	25234	406	0.01	0.02
3a	TR1	none	1042121	963870	643361	247080	209190	235705	204041	211900	218424	111081	0.17	0.51
3a	TR2	none	5269301	5379334	4493063	4860676	4134540	3601254	3492836	3336687	3414865	2667375	0.59	0.78
3a	TR2	CPart11										417983		
3a	TR3	none	349804	511806	507228	654355	481725	485616	358274	307710	152411	97045	0.19	0.64
3a	Total regulated gears		7011508	7236827	6107853	6031166	4999585	4541016	4284633	4068093	3982487	3471716	0.57	0.87
3a	Unregulated		479959	687114	683740	790918	725930	772197	818623	735521	521348	767823	1.12	1.47
3a	Total all gears		7491467	7923941	6791593	6822084	5725515	5313213	5103256	4803614	4503835	4239539	0.62	0.94

Table. 6.2.1.3 Kattegat: Relative change in nominal effort 2010 data submission compared to 2009 submission (Kw *days at sea) by gear, derogation and country 2000-2008.

ANNEX	REG AREA	REG GEAR	COUNTRY	2000	2001	2002	2003	2004	2005	2006	2007	2008
IIa	3a	BT2	DEN	0	0	0	0	0	0	0	0	0
IIa	3a	GN1	DEN	0	0	0	0	0	0	0	0	0
IIa	3a	GN1	GER	0	0	0	0	0	0	0	0	0
IIa	3a	GN1	SWE	0	0	0	0	0	0	0	0	0
IIa	3a	GT1	DEN	0	0	0	0	0	0	0	0	0
IIa	3a	GT1	SWE	0	0	0	0	0	0	0	0	0
IIa	3a	LL1	DEN	0	0	0	0	0	0	0	0	0
IIa	3a	LL1	SWE	0	0	0	0	0	0	0	0	0
IIa	3a	TR1	DEN	0	-0.002	0	0	0	0	0	-0.016	-0.002
IIa	3a	TR1	GER	0	0	0	0	0	0	0	0	0
IIa	3a	TR1	SWE	0	0	0	0	0	0	0	0	0
IIa	3a	TR2	DEN	0	0	0	0	0	0	0	-0.001	-0.002
IIa	3a	TR2	GER	0	0	0	0	0	0	0	0	0
IIa	3a	TR2	SWE	0	0	0	0	0	0	0	0	0
IIa	3a	TR3	DEN	0	0	0	0	0	0	0	0	0
IIa	3a	TR3	GER	0	0	0	0	0	0	0	0	0
IIa	3a	TR3	SWE	0	0	0	0	0	0	0	0	0

Only Denmark updated the full time series this year, therefore there is no revision for Sweden and Germany. The minor differences in Danish data are due to the continuous validation processes for the logbooks data.

The time trends in effort are shown graphically in Figures 6.2.1.1 for the cod plan (all gears and trawl).

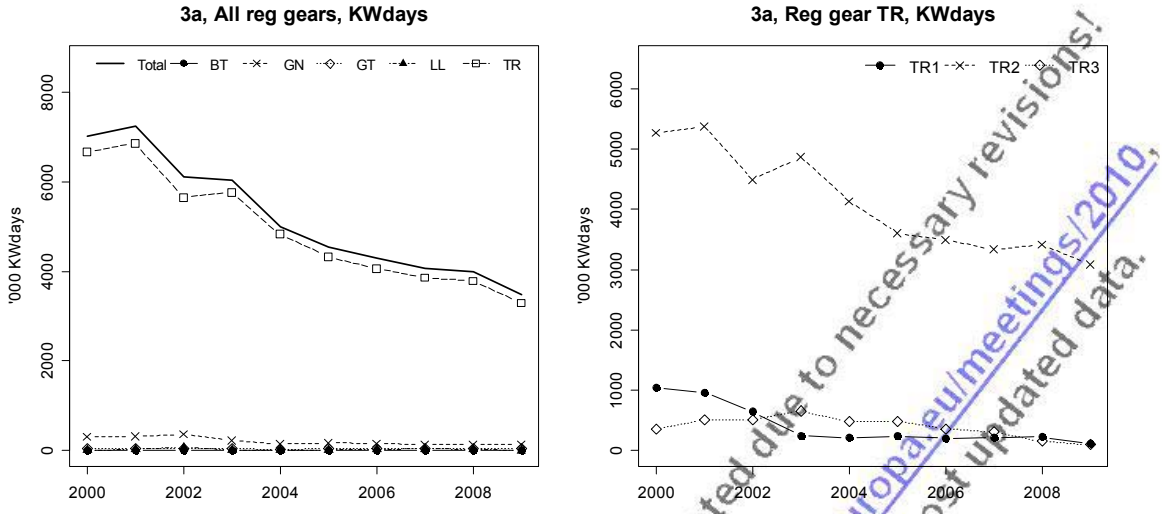


Figure 6.2.1.1. Kattegat: Top : Trend in nominal effort (Kw *days at sea) by gear types, 2000-2009. TR = demersal trawl, BT = Beam trawl, GN = Gillnet, GT = Trammel net, LL = Longline. Bottom. , effort by gear types within gear type TR; TR1=mesh size ≥100mm; TR2=mesh size ≥70, <100mm; TR3 ≥16, ≤32 mm.

6.2.2. Catch

Landings, discards and discard rates of cod, sole and plaice, as well as *Nephrops* and whiting, by cod plan gear category are shown in Tables 6.2.2.1. One outlier value for sole discarding in TR2 in 2003 was removed and replaced by the mean discard ratio between 2004 and 2009 for this category, as the very high discards rate observed were related to a closure of the Swedish sole quota in the 4th quarter of 2003, and it was considered misleading that this high ratio was included in the raising for other quarters and other countries. There are no discards estimates available for the gears GN, GT and TR3. Danish gillnet fisheries were initially sampled for discards data in the nineties, and it was estimated that the discards rates were fairly low (<10%), and therefore these fisheries are no longer routinely sampled. However, some harbour samplings may take place again in the new national sampling program.

There are a number of considerations with regards to the discard estimates in this area. There is some discrepancy in the sampling between the two main countries, and there are several aspects that bias the use of discard data within a gear group across countries. In Kattegat, the differences in national management systems as well as differences in fishing patterns mean that it is not always possible to consider the Swedish discard data representative for the Danish or German fishery (or *vice versa*). The different management regimes have implications on the discard patterns of fish, particularly fish discarded for quota reasons as the quotas are not being taken up at the same pace.

In Sweden the fishery is managed by weekly quotas while Denmark in 2007 introduced individual vessel quotas. The fishery in Sweden is also characterised by long periods of prohibition for landing certain species, particularly cod. In 2006 the cod fishery in Kattegat was closed for 8 months and in 2008 for the whole of the third quarter.

In 2009, both Denmark and Sweden only landed around 35% of their national cod quota, and therefore there hasn't been any closure.

Table 6.2.2.1 Kattegat Landings(L) , discard (D) and discard rate (R) of cod, plaice, sole, Nephrops and whiting by Gear 2003-2009.

ANNEX	SPECIES	GEAR	specon	COUNTRY	2003 L	2003 D	2003 R	2004 L	2004 D	2004 R	2005 L	2005 D	2005 R	2006 L	2006 D	2006 R	2007 L	2007 D	2007 R	2008 L	2008 D	2008 R	2009 L	2009 D	2009 R
IIa	COD	GN1	none	DEN	81	0	0.00	33	0	0.00	24	0	0.00	16	0	0.00	22	0	0.00	34	0	0.00	11	0	0.00
IIa	COD	GN1	none	GER	0	0	0.00	2	0	0.00	1	0	0.00	5	0	0.00	4	0	0.00	1	0	0.00	0	0	0.00
IIa	COD	GN1	none	SWE	6	0	0.00	1	0	0.00	2	0	0.00	4	0	0.00	2	0	0.00	11	0	0.00	2	0	0.00
IIa	COD	GT1	none	DEN	6	0	0.00	8	0	0.00	2	0	0.00	2	0	0.00	2	0	0.00	0	0	0.00	0	0	0.00
IIa	COD	GT1	none	SWE	14	0	0.00	6	0	0.00	5	0	0.00	1	0	0.00	2	0	0.00	3	0	0.00	1	0	0.00
IIa	COD	LL1	none	DEN	3	0	0.00	2	0	0.00			0.00			0.00			0.00			0.00			0.00
IIa	COD	LL1	none	SWE	17	0	0.00			0.00	1	0	0.00	3	0	0.00	0	0	0.00	14	0	0.00			0.00
IIa	COD	TR1	none	DEN	147	45	0.23	68	52	0.43	83	42	0.34	36	8	0.18	51	40	0.44	25	1	0.04	16	12	0.43
IIa	COD	TR1	none	GER	0	0	0.00	6	0	0.00	9	6	0.40	5	0	0.00	1	0	0.00	0	0	0.00			0.00
IIa	COD	TR1	none	SWE	54	11	0.17	35	27	0.44	25	9	0.26	8	1	0.11	31	7	0.18	7	3	0.30	1	0	0.00
IIa	COD	TR2	none	DEN	900	391	0.30	559	306	0.35	346	211	0.38	346	189	0.35	252	193	0.43	182	122	0.40	86	54	0.39
IIa	COD	TR2	none	GER	2	1	0.33	3	6	0.67	0	0	0.00	1	0	0.00	2	1	0.33	1	0	0.00	0	0	0.00
IIa	COD	TR2	CPart11	SWE			0.00			0.00			0.00			0.00			0.00			0.00	0	13	1.00
IIa	COD	TR2	none	SWE	685	367	0.35	398	754	0.65	284	262	0.48	282	475	0.63	198	207	0.51	116	45	0.28	35	21	0.38
IIa	COD	TR3	none	DEN	79	0	0.00	26	0	0.00	14	0	0.00	36	0	0.00	7	0	0.00	7	0	0.00	0	0	0.00
IIa	NEP	GN1	none	DEN	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			0.00
IIa	NEP	GN1	none	GER	0	0	0.00			0.00			0.00			0.00			0.00			0.00			0.00
IIa	NEP	GN1	none	SWE			0.00			0.00			0.00			0.00	0	0	0.00	0	0	0.00			0.00
IIa	NEP	GT1	none	DEN	1	0	0.00			0.00	1	0	0.00			0.00	0	0	0.00			0.00	1	0	0.00
IIa	NEP	GT1	none	SWE	0	0	0.00			0.00			0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
IIa	NEP	TR1	none	DEN	8	1	0.11	6	3	0.33	6	0	0.00	5	0	0.00	25	200	0.89	38	134	0.78	13	10	0.43
IIa	NEP	TR1	none	GER			0.00			0.00			0.00			0.00	0	1	1.00	0	0	0.00			0.00
IIa	NEP	TR1	none	SWE	2	1	0.33	0	0	0.00	1	0	0.00	0	0	0.00	4	25	0.86	25	32	0.56	4	4	0.50
IIa	NEP	TR2	none	DEN	1298	572	0.31	1334	679	0.34	1168	882	0.43	894	853	0.49	1185	964	0.45	1374	1230	0.47	1411	734	0.34
IIa	NEP	TR2	none	GER	12	6	0.33	9	5	0.36	2	1	0.33	6	6	0.50	13	13	0.50	19	18	0.49	15	10	0.40
IIa	NEP	TR2	CPart11	SWE			0.00			0.00			0.00			0.00			0.00			0.00	241	216	0.47
IIa	NEP	TR2	none	SWE	281	114	0.29	269	251	0.48	301	177	0.37	345	188	0.35	481	533	0.53	516	661	0.56	201	182	0.48
IIa	NEP	TR3	none	DEN	9	0	0.00	0	0	0.00	1	0	0.00	2	0	0.00	1	0	0.00	1	0	0.00	1	0	0.00
IIa	PLE	GN1	none	DEN	103	0	0.00	101	0	0.00	67	0	0.00	60	0	0.00	52	0	0.00	53	0	0.00	18	0	0.00
IIa	PLE	GN1	none	GER	3	0	0.00	2	0	0.00	5	0	0.00	8	0	0.00	6	0	0.00	3	0	0.00	3	0	0.00
IIa	PLE	GN1	none	SWE	4	0	0.00	7	0	0.00	1	0	0.00	2	0	0.00	4	0	0.00	4	0	0.00	6	0	0.00
IIa	PLE	GT1	none	DEN	7	0	0.00	14	0	0.00	17	0	0.00	24	0	0.00	6	0	0.00	10	0	0.00	3	0	0.00
IIa	PLE	GT1	none	SWE	50	0	0.00	21	0	0.00	19	0	0.00	20	0	0.00	21	0	0.00	29	0	0.00	3	0	0.00
IIa	PLE	LL1	none	DEN	0	0	0.00			0.00			0.00			0.00			0.00			0.00			0.00
IIa	PLE	TR1	none	DEN	252	936	0.79	315	142	0.31	388	173	0.31	461	181	0.28	429	208	0.33	268	95	0.26	180	70	0.28
IIa	PLE	TR1	none	GER	0	0	0.00	0	0	0.00	2	0	0.00	6	2	0.25	2	1	0.33	0	0	0.00			0.00
IIa	PLE	TR1	none	NED			0.00			0.00			0.00			0.00			0.00			0.00	4	1	0.20
IIa	PLE	TR1	none	SWE	7	6	0.46	2	3	0.60	2	1	0.33	1	1	0.50	3	16	0.84	4	3	0.43	1	1	0.50
IIa	PLE	TR2	none	DEN	1360	2474	0.65	675	840	0.55	416	361	0.46	545	250	0.31	454	264	0.37	382	206	0.35	245	253	0.51
IIa	PLE	TR2	none	GER	3	5	0.62	3	5	0.62	1	0	0.00	1	0	0.00	2	2	0.50	2	2	0.50	2	2	0.50
IIa	PLE	TR2	none	SWE	175	515	0.75	93	160	0.63	62	109	0.64	130	158	0.55	116	317	0.73	84	72	0.46	40	61	0.60
IIa	PLE	TR2	CPart11	SWE			0.00			0.00			0.00			0.00			0.00			0.00	3	37	0.92
IIa	PLE	TR3	none	DEN	18	0	0.00	9	0	0.00	7	0	0.00	1	0	0.00	4	0	0.00	1	0	0.00	0	0	0.00

ANNEX	SPECIES	GEAR	specon	COUNTRY	2003 L	2003 D	2003 R	2004 L	2004 D	2004 R	2005 L	2005 D	2005 R	2006 L	2006 D	2006 R	2007 L	2007 D	2007 R	2008 L	2008 D	2008 R	2009 L	2009 D	2009 R
IIa	SOL	GN1	none	DEN	17	0	0.00	18	0	0.00	74	0	0.00	58	0	0.00	30	0	0.00	30	0	0.00	40	0	0.00
IIa	SOL	GN1	none	GER	14	0	0.00	15	0	0.00	33	0	0.00	43	0	0.00	33	0	0.00	27	0	0.00	21	0	0.00
IIa	SOL	GN1	none	SWE	0	0	0.00			0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	10	0	0.00
IIa	SOL	GT1	none	DEN	2	0	0.00	2	0	0.00	13	0	0.00	11	0	0.00	6	0	0.00	6	0	0.00	8	0	0.00
IIa	SOL	GT1	none	SWE	4	0	0.00	2	0	0.00	3	0	0.00	6	0	0.00	9	0	0.00	10	0	0.00	7	0	0.00
IIa	SOL	TR1	none	DEN	5	2	0.29	4	0	0.00	9	0	0.00	17	0	0.00	9	5	0.36	7	0	0.00	2	0	0.00
IIa	SOL	TR1	none	GER	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			0.00
IIa	SOL	TR1	none	SWE	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	1	1.00	0	0	0.00
IIa	SOL	TR2	none	DEN	115	11	0.09	146	50	0.26	230	23	0.09	247	14	0.05	191	13	0.06	201	7	0.03	161	7	0.04
IIa	SOL	TR2	none	GER	4	121	0.97	3	2	0.40	0	0	0.00	0	0	0.00	2	0	0.00	4	0	0.00	1	0	0.00
IIa	SOL	TR2	CPart11	SWE			0.00			0.00			0.00			0.00			0.00			0.00	1	8	0.89
IIa	SOL	TR2	none	SWE	6	3	0.33	10	14	0.58	15	2	0.12	17	3	0.15	16	2	0.11	7	10	0.59	3	3	0.50
IIa	SOL	TR3	none	DEN	1	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
IIa	WHG	GN1	none	DEN	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			0.00			0.00
IIa	WHG	GN1	none	GER			0.00	0	0	0.00			0.00	0	0	0.00	0	0	0.00	0	0	0.00			0.00
IIa	WHG	GN1	none	SWE	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
IIa	WHG	GT1	none	DEN	0	0	0.00			0.00	0	0	0.00			0.00	0	0	0.00			0.00	0	0	0.00
IIa	WHG	GT1	none	SWE	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00
IIa	WHG	LL1	none	SWE			0.00			0.00	0	0	0.00	0	0	0.00	0	0	0.00			0.00			0.00
IIa	WHG	TR1	none	DEN	2	8	0.80	5	13	0.72	1	23	0.96	0	0	0.00	0	0	0.00	0	0	0.00	0	2	1.00
IIa	WHG	TR1	none	GER			0.00			0.00			0.00			0.00			0.00	0	0	0.00			0.00
IIa	WHG	TR1	none	SWE	2	7	0.78	0	0	0.00	1	2	0.67	0	0	0.00	2	13	0.87	1	8	0.89	0	1	1.00
IIa	WHG	TR2	none	DEN	42	1397	0.97	30	870	0.97	20	586	0.97	19	513	0.96	18	411	0.96	12	247	0.95	10	111	0.92
IIa	WHG	TR2	none	GER	1	27	0.96	1	27	0.96	0	0	0.00	0	0	0.00	0	0	0.00	0	1	1.00	0	0	0.00
IIa	WHG	TR2	CPart11	SWE			0.00			0.00			0.00			0.00			0.00			0.00	1	17	0.94
IIa	WHG	TR2	none	SWE	43	278	0.87	51	887	0.95	47	247	0.84	56	258	0.82	48	251	0.84	31	147	0.83	12	54	0.82
IIa	WHG	TR3	none	DEN	496	0	0.00	637	0	0.00	431	0	0.00	333	0	0.00	173	0	0.00	170	0	0.00	54	0	0.00

The Swedish fisheries operating under the derogation CPart11 use a specific grid, the "Swedish grid", that allows escapement of cod above the minimum landings size. The Table 6.2.2.1 above indicates that no marketable cod have been landed with this gear in 2009, in spite of the quota not having been reached. Discards only include undersized cod.

Figures 6.2.2.1 to 6.2.2.3 show the landings and discards of various species take in trawl gears.

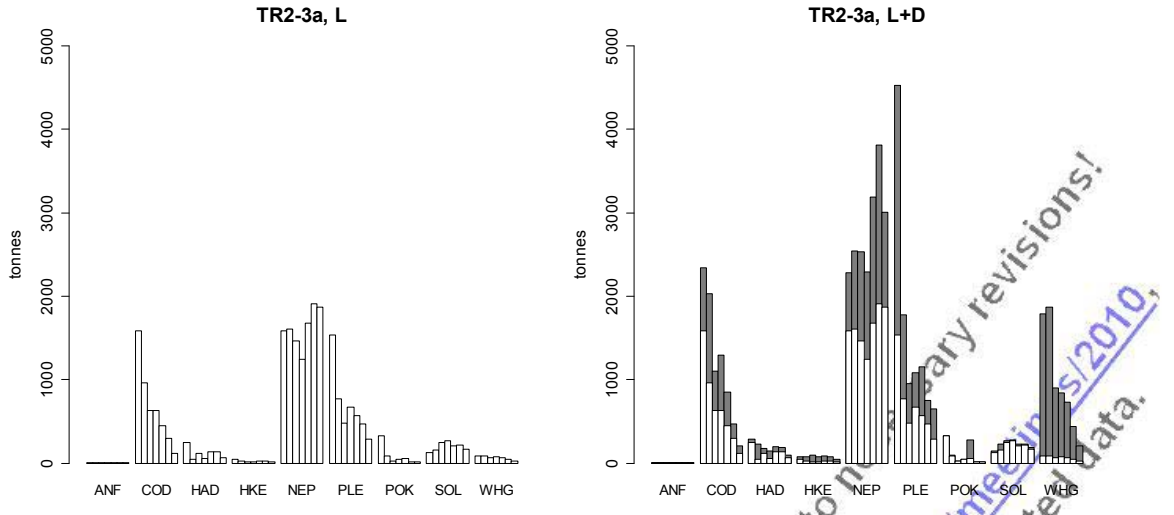


Fig 6.2.2.1 Landings (left) and catch (landings - white and discard - grey) of TR2 in area 3a Kattegat 2003-2009.

There has generally been a decrease in the amount of discards since 2003. For whiting in particular, it is considered that the generalisation of the square panel window has significantly reduced the quantities of small fish retained in the trawls.

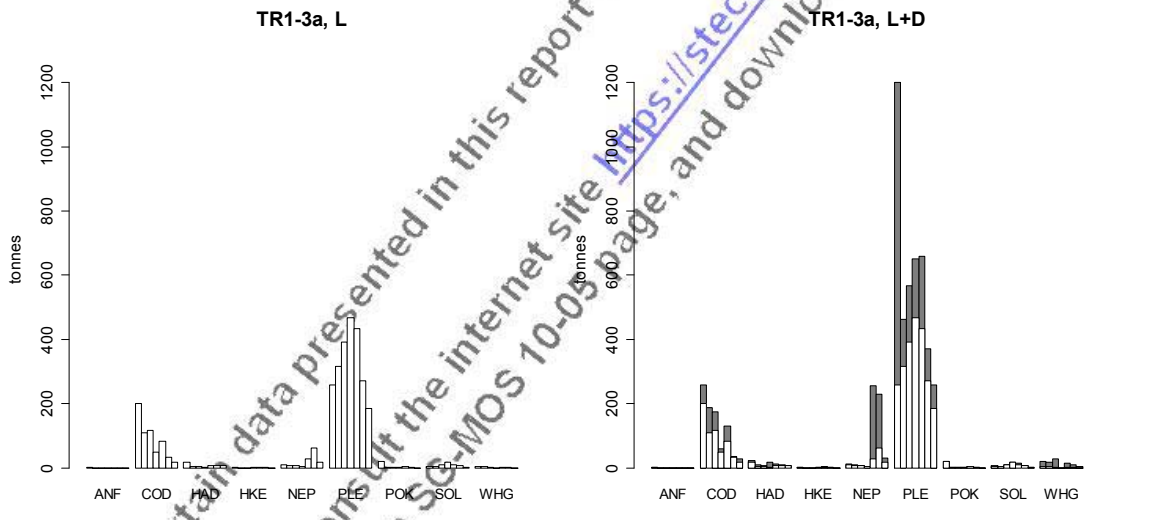


Fig 6.2.2.2 Landings (left) and catch (landings and discard) of TR1 in area 3a Kattegat 2003-2009.

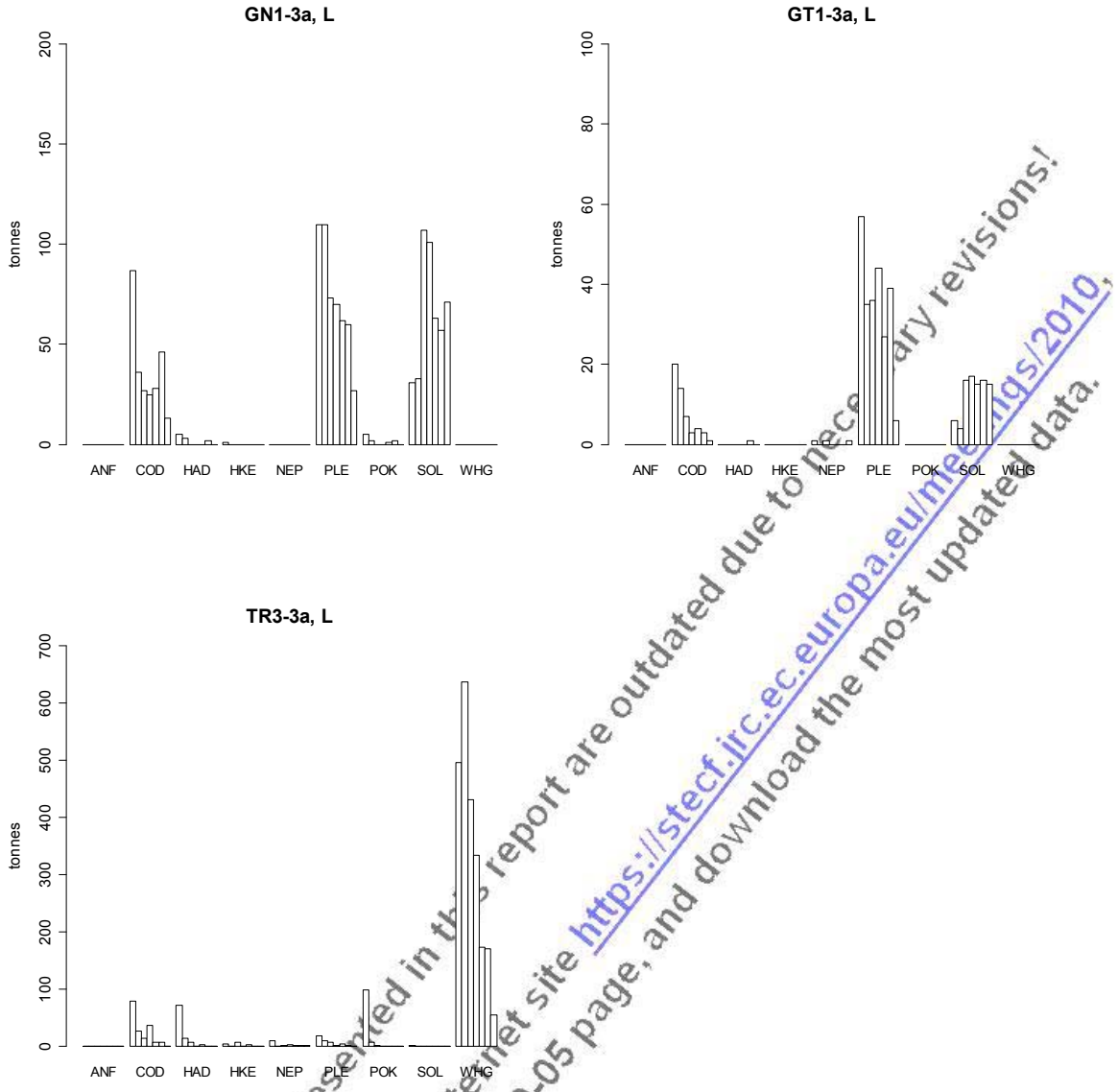


Fig 6.2.2.3 Landings of GN, GT and TR3 in area 3a Kattegat 2003-2009 (No discards data available).

Catch numbers at age of cod and plaice are shown in Figure 6.2.2.4 and 6.2.2.5 respectively.

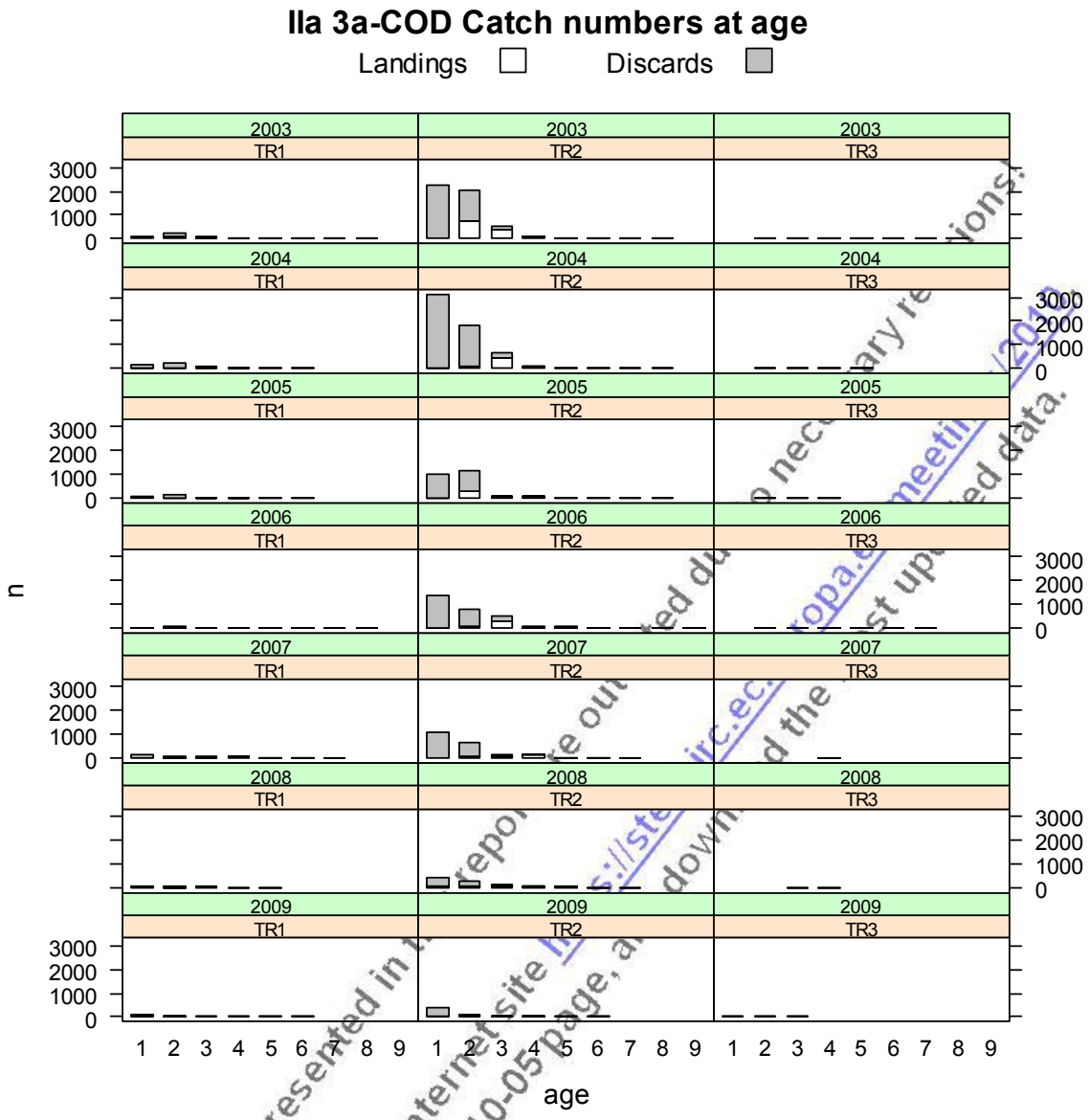


Fig 6.2.2.4 Landings and discards by age of Cod in gear group TR1, TR2, TR3 in area 3a Kattegat 2003-2009.

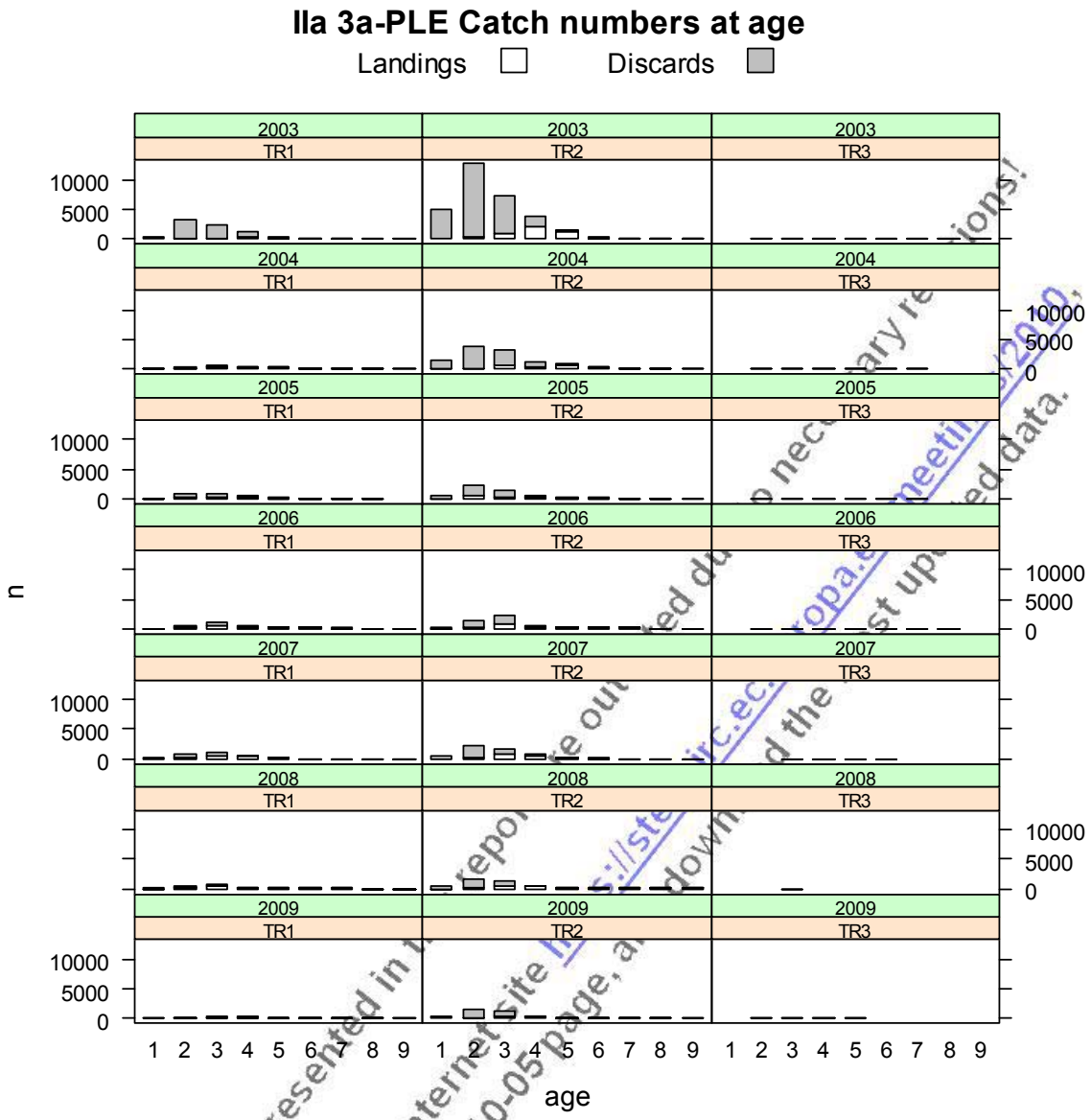


Fig 6.2.2.5 Landings and discards by age of Plaice in gear group TR1;TR2;TR3 in area 3a Kattegat 2003-2009.

6.2.3. Landings Per Unit of Effort (LPUE) and Catches Per Unit Effort (CPUE) of cod, sole and plaice in area 3A Kattegat

The Tables below show CPUE and LPUE of cod, plaice and sole between 2003-2009.

Table 6.2.3.1 CPUE of cod, sole, plaice by gear 2003-2009 (including some categories from the previous Annex IIa categories still identified for the Swedish fisheries).

SPECIES	REG AREA (	REG GEAR (	SPECON	2003	2004	2005	2006	2007	2008	2009	2007-2009
COD	3a	BT2	none	0	0	0	0	0	0	0	0
COD	3a	GN1	none	398	251	162	159	219	345	95	217
COD	3a	GT1	none	482	538	146	68	86	73	25	63
COD	3a	LL1	none	2353	449	94	108	0	555	0	220
COD	3a	TR1	none	1036	903	734	289	613	156	261	356
COD	3a	TR2	CPart11	0	0	0	0	0	0	33	33
COD	3a	TR2	none	483	491	316	388	273	149	73	170
COD	3a	TR3	none	121	54	29	100	23	46	0	25
PLE	3a	BT2	none	0	0	0	0	0	0	0	0
PLE	3a	GN1	none	503	766	438	444	486	460	189	374
PLE	3a	GT1	none	1374	1344	877	998	583	951	173	571
PLE	3a	LL1	none	0				0	0	0	0
PLE	3a	TR1	none	4857	2209	2401	3200	3110	1694	2305	2373
PLE	3a	TR2	CPart11	0	0	0	0	0	0	96	96
PLE	3a	TR2	none	933	430	270	322	367	234	228	278
PLE	3a	TR3	none	28	19	14	3	13	0	0	7
SOL	3a	BT2	none	0	0	0	0	0	0	0	0
SOL	3a	GN1	none	142	230	642	641	494	444	517	485
SOL	3a	GT1	none	121	154	390	385	324	390	346	352
SOL	3a	TR1	none	24	19	42	78	66	27	18	41
SOL	3a	TR2	CPart11	0	0	0	0	0	0	22	22
SOL	3a	TR2	none	1872	55	77	84	72	73	65	70
SOL	3a	TR3	none	2	0	0	0	0	0	0	0

Table 6.2.3.2 LPUE of cod, sole, plaice by gear 2003-2009(including some categories from the previous Annex IIa categories still identified for the Swedish fisheries).

SPECIES	REG AREA (	REG GEAR (	SPECON	2003	2004	2005	2006	2007	2008	2009	2007-2009
COD	3a	BT2	none	0	0	0	0	0	0	0	0
COD	3a	GN1	none	398	251	162	159	219	345	95	217
COD	3a	GT1	none	482	538	146	68	86	73	25	63
COD	3a	LL1	none	2353	449	94	108	0	555	0	220
COD	3a	TR1	none	818	521	496	240	387	142	153	240
COD	3a	TR2	CPart11	0	0	0	0	0	0	0	0
COD	3a	TR2	none	326	233	180	189	145	96	45	98
COD	3a	TR3	none	121	54	29	100	23	46	0	25
PLE	3a	BT2	none	0	0	0	0	0	0	0	0
PLE	3a	GN1	none	503	766	438	444	486	460	189	374
PLE	3a	GT1	none	1374	1344	877	998	583	951	173	571
PLE	3a	LL1	none	0				0	0	0	0
PLE	3a	TR1	none	1048	1515	1659	2294	2048	1241	1665	1644
PLE	3a	TR2	CPart11	0	0	0	0	0	0	10	10
PLE	3a	TR2	none	317	187	137	202	184	150	108	150
PLE	3a	TR3	none	28	19	14	3	13	0	0	7
SOL	3a	BT2	none	0	0	0	0	0	0	0	0
SOL	3a	GN1	none	142	230	642	641	494	444	517	485
SOL	3a	GT1	none	121	154	390	385	324	390	346	352
SOL	3a	TR1	none	16	19	42	78	42	27	18	31
SOL	3a	TR2	CPart11	0	0	0	0	0	0	0	0
SOL	3a	TR2	none	26	39	70	79	67	68	62	66
SOL	3a	TR3	none	2	0	0	0	0	0	0	0

The figures below show CPUE and LPUE of cod, plaice and sole between 2003-2009 for four main gears.

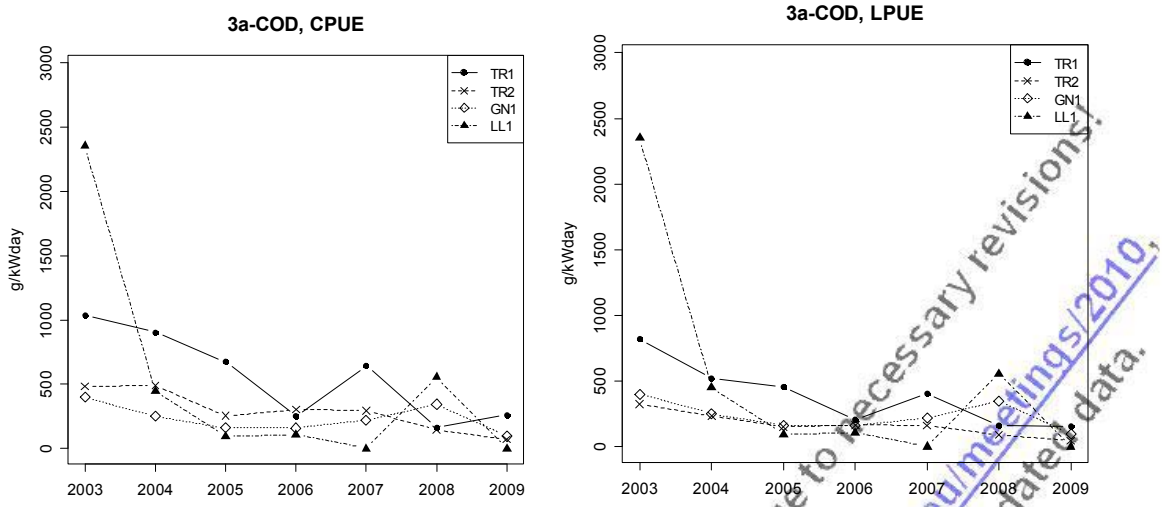


Figure 6.2.3.1 Left: CPUE of cod by gear category. Right: LPUE of cod by gear category 2003-2009.

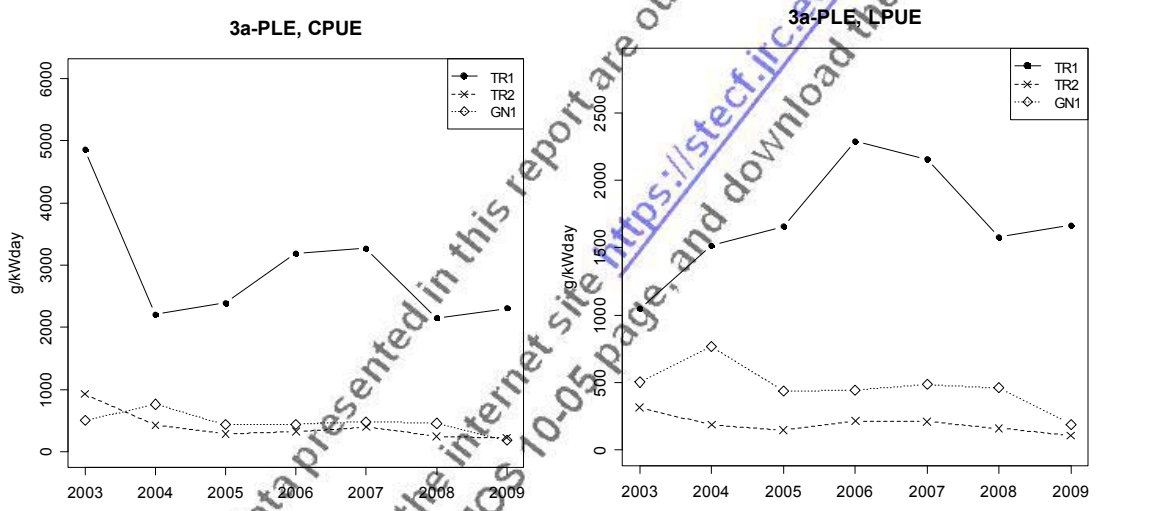


Figure 6.2.3.2 Left: CPUE of plaice by gear category. Right: LPUE of plaice by gear category 2003-2008.

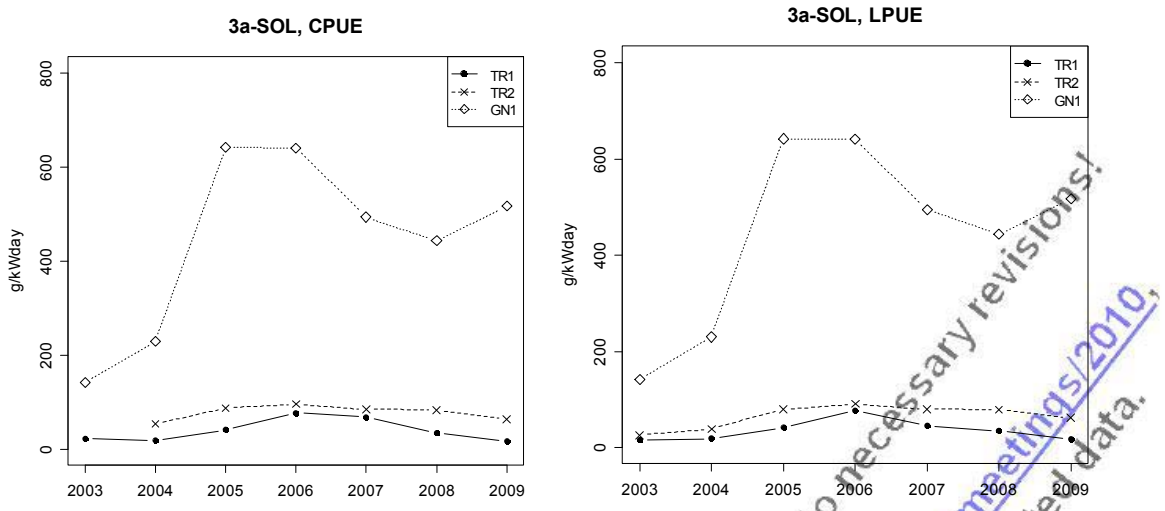


Figure 6.2.3.2. Left: CPUE of sole by gear category (TR2 CPUE 2003 not shown). Right: LPUE of sole by gear category 2003-2009.

6.2.4. Ranked derogations

Rankings of gears of in terms of catches and landings are shown in Tables 6.2.4.1 and 6.2.4.2.

Table 6.2.4.1 Ranked gear Categories according to the proportional catches of Cod, Plaice and Sole 2003-2009.

ANNEX	REG_AREA	SPECIES	REG_GEAR	2003 Rel	2004 Rel	2005 Rel	2006 Rel	2007 Rel	2008 Rel	2009 Rel
IIa	3a	COD	TR2	0.83	0.88	0.82	0.88	0.83	0.81	0.8
IIa	3a	COD	TR1	0.09	0.08	0.13	0.04	0.13	0.06	0.11
IIa	3a	COD	GN1	0.03	0.02	0.02	0.02	0.03	0.08	0.05
IIa	3a	COD	OTTER	0.01	0	0.01	0.01	0	0.01	0.03
IIa	3a	COD	GT1	0.01	0.01	0.01	0	0	0.01	0
IIa	3a	COD	TR3	0.03	0.01	0.01	0.02	0.01	0.01	0
IIa	3a	PLE	TR2	0.76	0.74	0.58	0.58	0.6	0.61	0.55
IIa	3a	PLE	TR1	0.2	0.19	0.35	0.35	0.34	0.3	0.22
IIa	3a	PLE	BT2							0.13
IIa	3a	PLE	BT1							0.08
IIa	3a	PLE	GN1	0.02	0.05	0.05	0.04	0.03	0.05	0.02
IIa	3a	PLE	GT1	0.01	0.01	0.02	0.02	0.01	0.03	0.01
IIa	3a	SOL	TR2		0.84	0.67	0.67	0.7	0.74	0.68
IIa	3a	SOL	GN1	0	0.12	0.26	0.24	0.2	0.18	0.26
IIa	3a	SOL	GT1	0	0.01	0.04	0.04	0.05	0.05	0.05
IIa	3a	SOL	TR1	0	0.02	0.02	0.04	0.04	0.02	0.01

Table 6.2.4.2 Ranked gear Categories according to the proportional landings of Cod, Plaice and Sole 2003-2009.

ANNEX	REG_AREA	SPECIES	REG_GEAR	2003 Rel	2004 Rel	2005 Rel	2006 Rel	2007 Rel	2008 Rel	2009 Rel
IIa	3a	COD	TR2	0.78	0.83	0.77	0.8	0.77	0.74	0.74
IIa	3a	COD	TR1	0.1	0.09	0.14	0.06	0.14	0.08	0.1
IIa	3a	COD	GN1	0.04	0.03	0.03	0.03	0.05	0.11	0.08
IIa	3a	COD	OTTER	0.01	0.01	0.01	0.02	0.01	0.01	0.06
IIa	3a	COD	BT1							0.01
IIa	3a	COD	GT1	0.01	0.01	0.01	0	0.01	0.01	0.01
IIa	3a	COD	BT2							0.01
IIa	3a	PLE	TR2	0.77	0.62	0.48	0.53	0.52	0.56	0.57
IIa	3a	PLE	TR1	0.13	0.25	0.4	0.37	0.39	0.32	0.37
IIa	3a	PLE	GN1	0.05	0.09	0.07	0.06	0.06	0.07	0.04
IIa	3a	PLE	OTTER	0	0	0	0	0	0	0.01
IIa	3a	PLE	GT1	0.03	0.03	0.04	0.03	0.03	0.05	0.01
IIa	3a	SOL	TR2	0.74	0.79	0.64	0.66	0.7	0.72	0.66
IIa	3a	SOL	GN1	0.19	0.16	0.28	0.25	0.21	0.19	0.28
IIa	3a	SOL	GT1	0.03	0.02	0.04	0.04	0.05	0.05	0.06
IIa	3a	SOL	TR1	0.03	0.02	0.02	0.04	0.03	0.02	0.01

The fishery in Kattegat is totally dominated by the gear category TR2 which contributes 73 % of the total effort, 74 % of the cod landed, 57 % of the plaice landed and 66 % of the sole landed in 2009. However, the gear category TR2 also includes the Swedish grid fishery (derogation CPart11) which has shown an increased use from 2005. This gear is still however only used by Swedish fishermen.

6.2.5. Unregulated gears in Kattegat

Table 6.2.5.1 and Figure 6.2.5.1 shows the effort by unregulated gear categories (defined in the new cod plan). Unspecified otter trawl and pelagic trawls are the most important gear types. There has been a drop in unregulated gears in 2008 only (mostly pelagic trawl), but the effort level has shifted back to the recent average in 2009.

Table 6.2.5.1. Effort (Kwdays) of unregulated gear in Kattegat 2000-2009.

REG AREA	REG GEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Rel 2002	Rel 2008
3a	BEAM				126	118							
	DEM_SEINE				813		354						
	DREDGE	3782	11218	7881	7526	6461	33713	39802	50977	55259	36768	4.67	0.67
	none	12544	10384	28958	10309	15212	8924	17261	15766	24584	47342	1.63	1.93
	OTTER	283517	289388	284275	290906	205883	189643	258570	200213	157752	232709	0.82	1.48
	PEL_SEINE	2880	5240	22361	31059	20680	25640	52976	32560	16157	11000	0.49	0.68
	PEL_TRAWL	124187	312184	287663	395285	391770	448473	374703	349489	192363	375715	1.31	1.95
	POTS	53049	58700	52602	54894	85806	65450	75311	86516	75233	64289	1.22	0.85
Grand Total		479959	687114	683740	790918	725930	772197	818623	735521	521348	767823	1.12	1.47

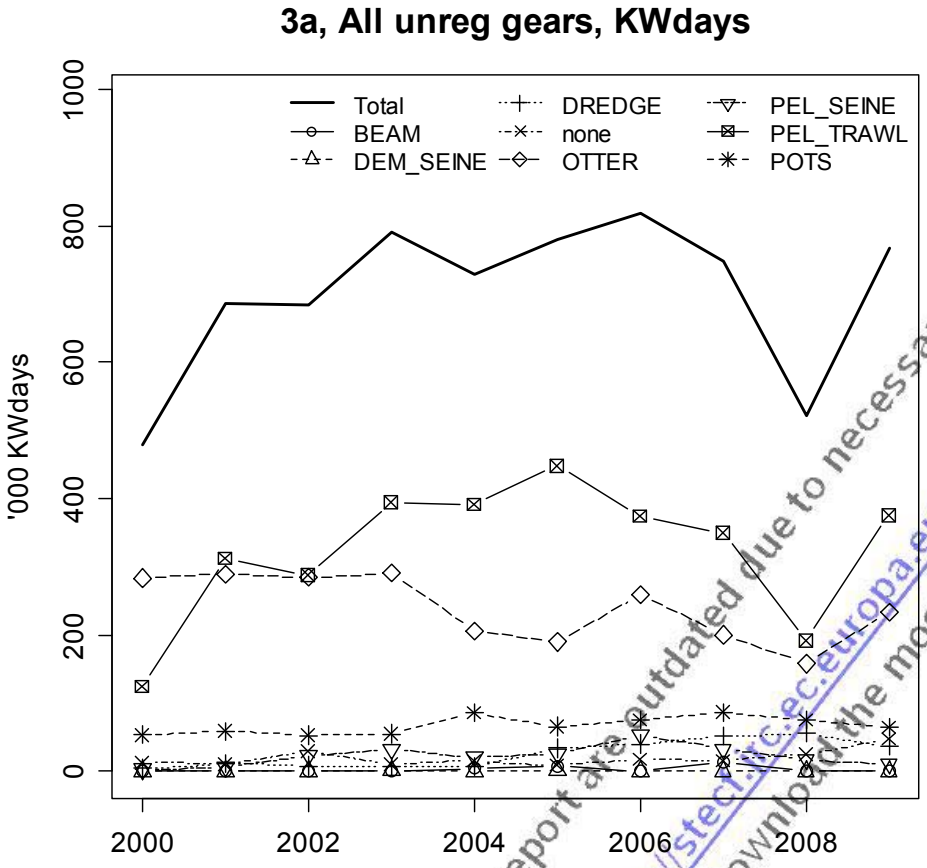


Figure. 6.2.5.1 Effort by unregulated gear in Kattegat 2000-2009.

Catches of cod, sole and plaice by unregulated gears are given in Tables 6.2.5.2 to 6.2.5.4 respectively.

Table 6.2.5.2. Kattegat Catch of cod by unregulated gears 2003-2009.

SPECIES	GEAR	COUNTRY	2003 L	2003 D	2003 R	2004 L	2004 D	2004 R	2005 L	2005 D	2005 R	2006 L	2006 D	2006 R	2007 L	2007 D	2007 R	2008 L	2008 D	2008 R	2009 L	2009 D	2009 R
COD	DEM_SEIN	DEN	1	0	0						0			0			0			0			0
COD	none	DEN	8	0	0	1	0	0	6	0	0	10	0	0	1	0	0	0	0	0	0	0	0
COD	none	SWE			0			0			0			0			0			0	0	0	0
COD	OTTER	DEN	15	0	0	7	0	0	7	0	0	14	0	0	1	0	0			0	0	0	0
COD	OTTER	SWE	2	0	0	1	0	0	5	0	0	4	0	0	5	0	0	4	0	0	9	0	0
COD	PEL_TRAW	DEN	2	0	0	3	0	0	5	0	0	15	0	0	1	0	0	0	0	0	0	0	0
COD	PEL_TRAW	SWE	0	0	0			0			0			0	4	0	0			0			0
COD	POTS	DEN	0	0	0			0			0			0			0			0			0
COD	POTS	SWE			0			0	0	0	0	0	0	0			0			0	0	0	0

Table 6.2.5.3. Kattegat Catch of sole by unregulated gears 2003-2009.

SPECIES	GEAR	COUNTRY	2003 L	2003 D	2003 R	2004 L	2004 D	2004 R	2005 L	2005 D	2005 R	2006 L	2006 D	2006 R	2007 L	2007 D	2007 R	2008 L	2008 D	2008 R	2009 L	2009 D	2009 R
SOL	DEM_SEINI	DEN	0	0	0			0	0	0	0			0			0			0			0
SOL	none	DEN	2	0	0	1	0	0	2	0	0	2	0	0	3	0	0	1	0	0	0	0	0
SOL	OTTER	DEN	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
SOL	OTTER	GER			0			0			0	0	0	0			0			0			0
SOL	OTTER	SWE	0	0	0	0	0	0			0			0	0	0	0			0	0	0	0
SOL	PEL_TRAW	DEN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOL	POTS	DEN	0	0	0			0			0			0			0			0			0

Table 6.2.5.3. Kattegat Catch of plaice by unregulated gears 2003-2009.

SPECIES	GEAR	COUNTRY	2003 L	2003 D	2003 R	2004 L	2004 D	2004 R	2005 L	2005 D	2005 R	2006 L	2006 D	2006 R	2007 L	2007 D	2007 R	2008 L	2008 D	2008 R	2009 L	2009 D	2009 R
PLE	DEM_SEINI	DEN	0	0	0			0	1	0	0			0			0			0			0
PLE	none	DEN	23	0	0	11	0	0	1	0	0	4	0	0	7	0	0	2	0	0	1	0	0
PLE	OTTER	DEN	1	0	0	0	0	0	1	0	0	4	0	0	2	0	0	1	0	0	0	0	0
PLE	OTTER	GER			0			0			0	0	0	0			0			0			0
PLE	OTTER	SWE	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	3	0	0
PLE	PEL_TRAW	DEN	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLE	POTS	DEN	0	0	0			0			0			0			0			0			0

The total amount of the landings of cod, plaice and sole by the unregulated gears is less than 1% of the total amount of the landings.

6.2.6. Information on under 10m vessels

Landings of cod plaice and sole by vessels under 10m is presented in Table 6.2.6.1. In the previous years' reports, it was erroneously stated that vessels less than 10m were landing only minor proportions of the catches. This share is actually much larger. The total amount of the landings of Cod Plaice and Sole by the vessels under 10 m gears has varied, between 10 and 20% of the total amount of the catch for cod and plaice and 25-35% for sole (Table 6.2.6.2).

Table 6.2.6.1 Landings (t) of cod, plaice and sole by vessels under 10m, 2003-2009.

		Data						
SPECIES	REG GEAR COD	2003	2004	2005	2006	2007	2008	2009
COD	DEM_SEINE					0.4		
	GN1	40.3	16.5	23.5	30.8	21.5	7.6	5.3
	GT1	0.1	0.2	0.9	1.7	1.1	1.7	3.7
	LL1	1.3	0.5	1.9	5.9	7.5	1.1	0.2
	none	197.8	129.1	99.3	114.2	43.9	25.4	19.8
	OTTER	2.8	1.9	1.1	5.7	3.5	1.6	1.0
	PEL_TRAWL			0.1				
	POTS	0.3	0.0	0.2	0.1	0.1	0.1	0.0
COD Total		242.5	148.2	126.9	158.4	78.0	37.6	30.0
PLE	DEM_SEINE			0.0				
	DREDGE							0.1
	GN1	28.7	30.6	31.1	42.4	45.7	25.8	18.8
	GT1	7.1	3.1	7.3	11.8	13.2	9.8	24.5
	LL1				0.0	0.0		
	none	252.1	242.9	182.6	207.2	189.5	119.5	90.2
	OTTER	11.3	14.4	3.4	12.0	27.2	10.6	14.1
	PEL_TRAWL			0.1				
	POTS			0.0	0.0	0.0	0.0	
PLE Total		299.1	291.1	224.5	273.4	275.6	165.6	147.8
SOL	DEM_SEINE			0.0				
	DREDGE							0.0
	GN1	2.6	4.1	24.5	23.2	15.1	19.1	16.9
	GT1	0.3	0.1	6.5	10.1	10.3	9.7	11.7
	LL1				0.0	0.1		
	none	50.5	72.7	173.0	151.7	104.4	91.2	88.3
	OTTER	0.0	0.7	4.0	7.6	9.4	9.1	10.7
	PEL_TRAWL			0.1				
	POTS	0.0		0.1	0.7	0.3	0.2	0.1
SOL Total		53.5	77.6	208.1	193.3	139.6	129.2	127.7

Table 6.2.6.2 Percentage of total landings of cod, sole and plaice by vessels under 10m 2003-2009.

	2003	2004	2005	2006	2007	2008	2009
COD	11%	11%	13%	17%	12%	9%	16%
PLE	13%	19%	18%	18%	20%	16%	16%
SOL	24%	28%	35%	32%	32%	31%	34%

6.2.7. Spatial distribution patterns of effective effort

It is to be noted that the maps displayed in the previous years' reports were erroneous, due to a misspecification of the upper quantile estimate. This error has been corrected this year.

Kattegat is a rather small management area to find any changes in the pattern of the distribution of effort between the gears using statistical rectangles. A smaller grid would be required in order to pick up any spatial changes in this area.

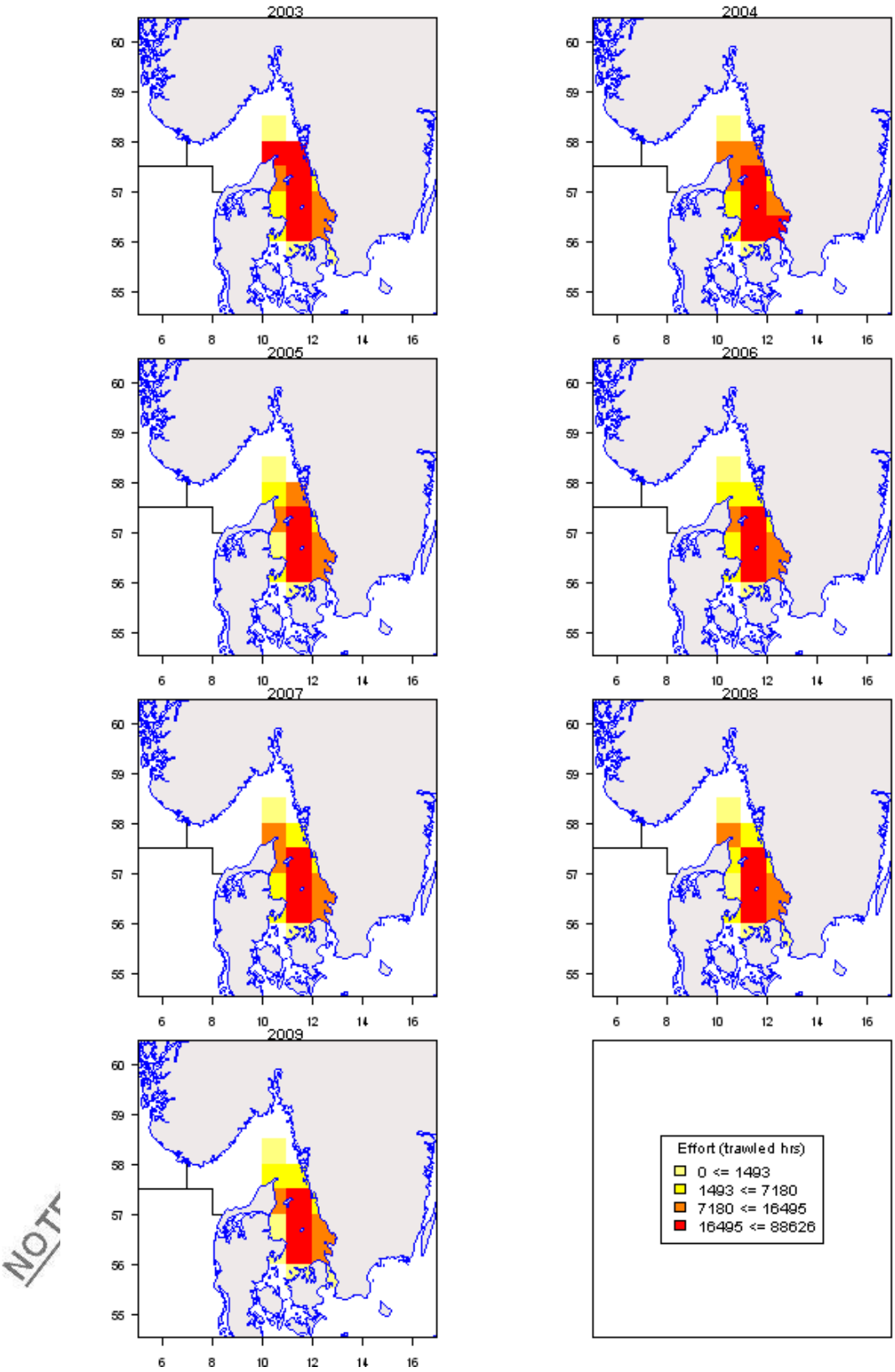
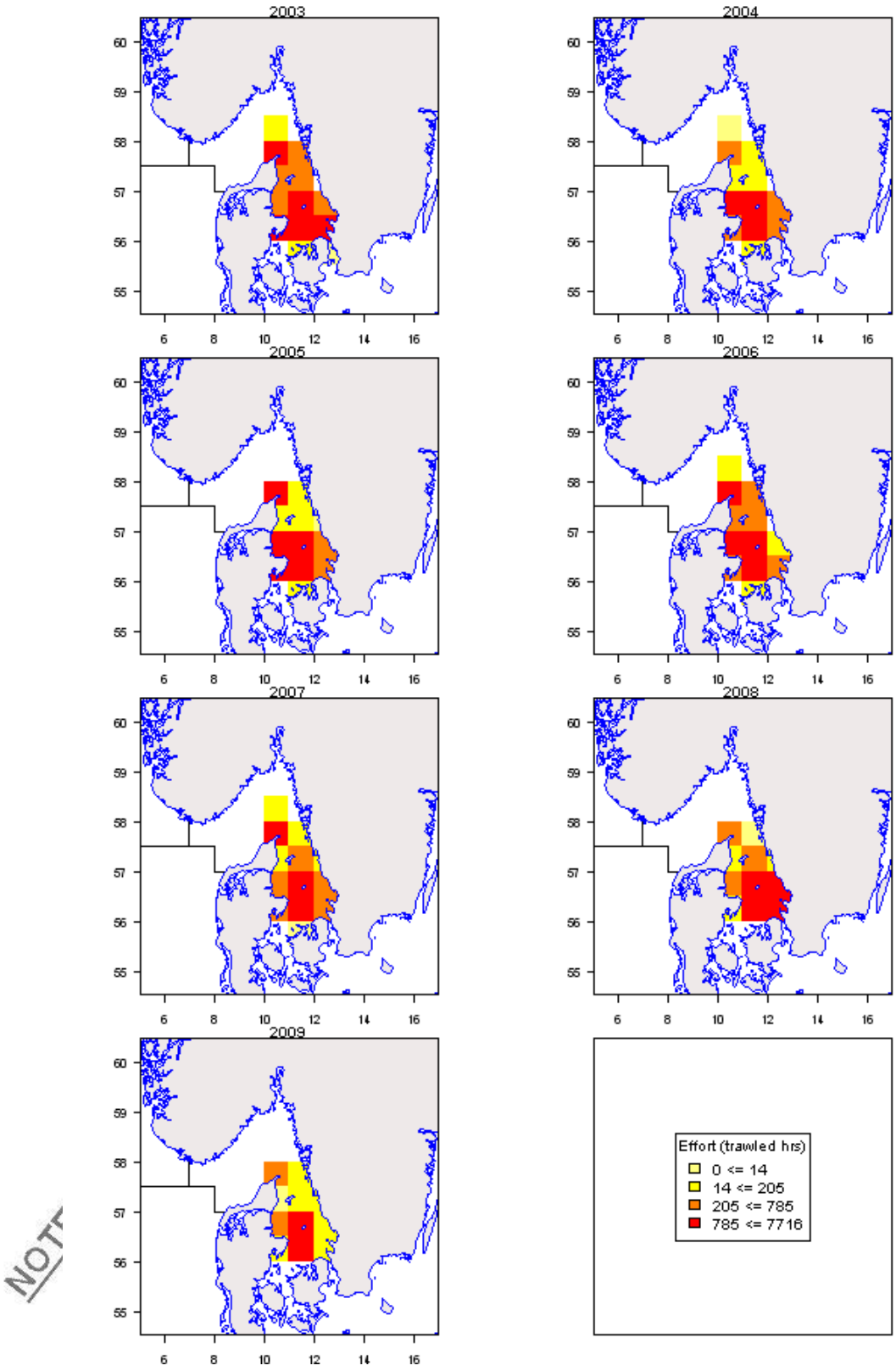
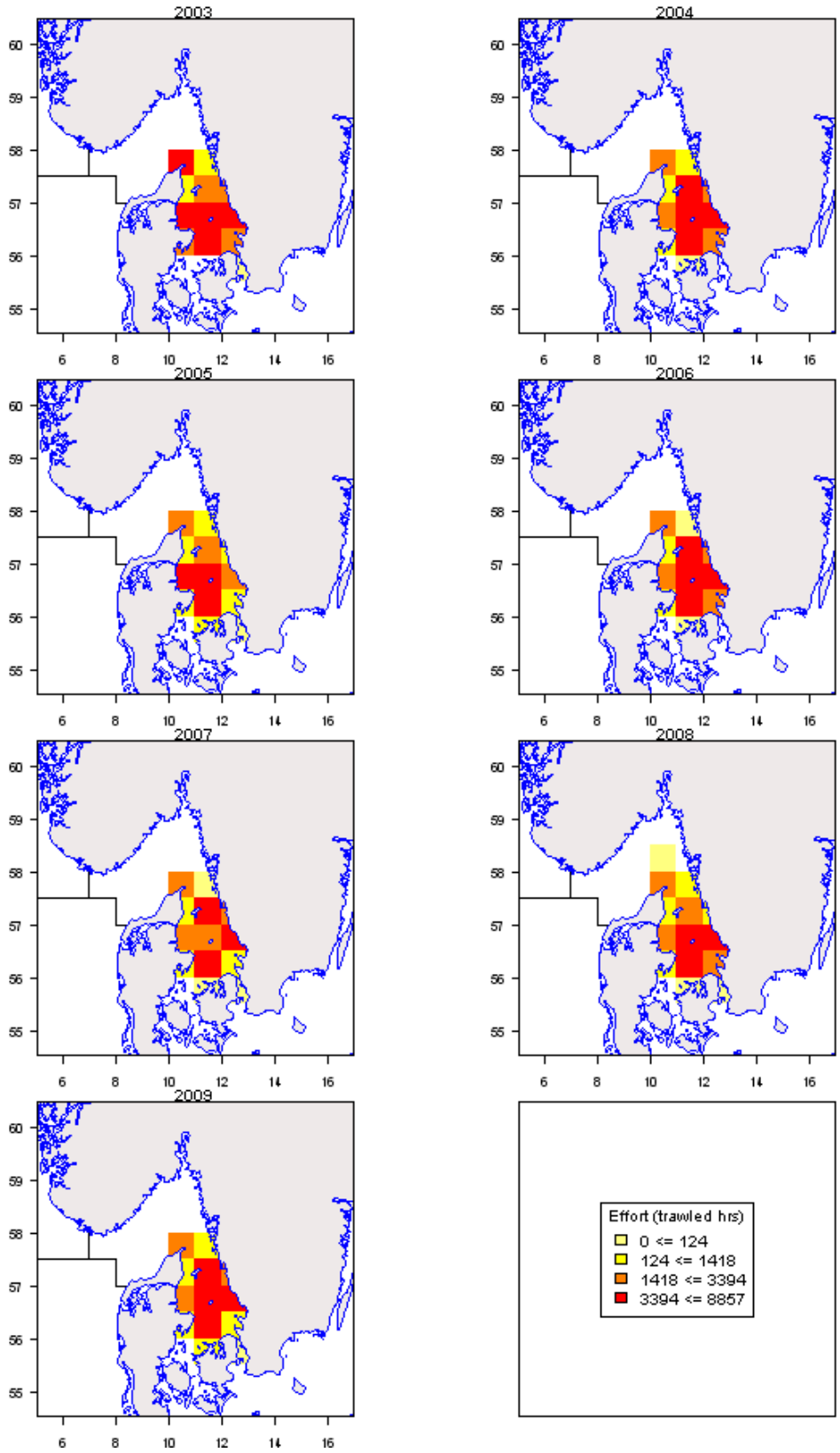


Figure 6.2.7.1. Spatial distribution of TR2 effort in Kattegat.



6.2.7.2. Spatial distribution of TR1 effort in Kattegat.



6.2.7.3. Spatial distribution of GN1 effort in Kattegat.

6.3. *Management area 3b: Skagerrak, North Sea (incl. 2EU), and Eastern Channel*

This section summarizes all the information collected for the management area covering the North Sea, the Skagerrak and the Eastern English Channel. In the current "cod plan" regulation (Council Regulation 43/2009) this area is referred to as management areas 3b. For ease of comparison with previous reports, it should be noted that, in the regulation that preceded 43/2009 (i.e. Annexe II of Council Regulation 40/2008) this area was referred to as area 2b.

6.3.1. Trend in effort by derogation in management area 3b: Skagerrak, North Sea (incl. 2EU), and Eastern Channel

Catch and effort data including 2009 special conditions have been provided by all Member States with significant fishing activity in this area. As such, the data are considered to represent a complete account of fishing effort by regulated gears in the area as reported by national administrations. As a result any inconsistencies or problems in the data arise from the data as reported rather than the subsequent compilation by the SG. In the current dataset there is a particular issue with the data for 2002 when the reported effort by French vessels is substantially higher than in other years. This appears anomalous but does not affect perception of more recent trends in effort. In many cases the French data for 2009 are identical or very close to the corresponding figures for 2008, hence the 2009 figures should be regarded as preliminary.

Information on nominal effort by regulated and unregulated gears in the Skagerrak, North Sea (incl. 2EU) and the Eastern Channel are listed by country in Table 6.3.1.1 for the 2009 cod plan categories.

The effort deployed in Gross tonnage days (GTdays) and number of vessels are not described in this report but can be found on the STECF SGMOS 10-05 website under the Final Report section: https://stecf.jrc.ec.europa.eu/meetings/2010?p_p_id=62_INSTANCE_Hk1G&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&p_p_col_id=column-2&p_p_col_count=1&_62_INSTANCE_Hk1G_struts_action=%2Fjournal_articles%2Fview&_62_INSTANCE_Hk1G_groupId=43805&_62_INSTANCE_Hk1G_articleId=44077&_62_INSTANCE_Hk1G_version=1.0

Trends in nominal aggregated effort in kilowatt-days by overall gear category according to Annex IIa of Council Regulation 43/2009 for the countries having provided data are given in Tables 6.3.1.2 and shown in Figure 6.3.1.1. For clarity, graphs of effort data are presented as aggregate totals for the whole of area 3b. For similar reasons, only figures for nominal effort in kW*days are plotted. A more detailed analysis of unregulated gears is presented in section 6.3.5. The main gears in management area 3b are demersal trawls/seines and beam trawls. Nominal effort by both of these gear types has shown a decrease since at least 2002, and this is reflected in the decrease in total effort over the same period.

Figures 6.3.1.2–6.3.1.6 show effort totals by mesh size category within the regulated gear types. Figure 6.3.1.2 shows trends in nominal effort (kW*days) by demersal trawls and seines by regulated mesh size category. The overall effort by these gears has shown a reduction since 2002. In the early years of the series there was a substantial switch from the larger mesh (TR1) gear to the smaller mesh (TR2) gear, although in the current data this is obscured by the problems with the 2002 French data. Subsequently, effort by TR1 has been relatively stable whereas TR2 effort has shown a general decline. In 2009, all UK effort by these gears was allocated to Special Condition CPart13, and all Swedish effort by TR2 gears was allocated to CPart11. For German vessels, 51% of TR1 and 1% of TR2 effort was allocated to CPart13.

The overall effort in beam trawl is at the same level as the overall effort in demersal trawl. Beam trawlers contributed around 40% to the overall nominal effort exerted in the Skagerrak, North Sea (incl. 2EU) and Eastern Channel. The data indicate a general reduction in beam trawl effort since at least 2002 (Figure 6.3.1.3). Not all of the data for the major Dutch and Belgian fleets could be assigned to mesh size, though based on expert knowledge the large majority of this effort has been assigned to the 80-89mm mesh size category (regulated gear BT2). For Belgium though, this applies only for the years prior to 2007, since the actual mesh size used has been correctly registered since 2007.

Static gears recently contribute only about 4-5% to the nominal effort deployed in the Skagerrak, North Sea (incl. 2EU) and Eastern Channel. STECF-SGRST notes that the fishing activities for static gears are poorly

quantified by nominal effort (kW*days at sea). With that caveat, usage of gillnets (Figure 6.3.1.4) and Trammel nets (Fig. 6.3.1.5) has remained relatively stable in recent years. The usage of longlines has increased (Figure 6.3.1.6), largely due to Scottish vessels, but the overall level of effort is still very low.

Table 6.3.1.1 Skagerrak, North Sea (Incl. 2EU), and Eastern Channel: Trend in nominal effort (kW*days at sea) by country and by derogation 2000-2009 according to the cod plan gear definitions.

GEAR	MS	SPECON	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
BT1	BEL	None	2362246	1878508	1797995	1036595	1262243	1391340	1234613	1247506	948817	607187
	DEN	None	110770	101605	1179534	1498917	1366044	1316858	788891	856617	449199	413427
	ENG	None	246329	524066	2202520	1060810	671129	618160	1321240	305837	228530	265710
	FRA	None	0	0	6006	0	0	0	0	0	0	0
	GER	None	1502	7947	113297	47736	31698	2128	53986	30297	17674	0
	NED	None	91720	179837	485345	625182	814723	856823	1598963	828513	392987	439835
	NIR	None	0	0	750376	965239	543305	36825	0	0	0	0
	SCO	None	0	0	971920	866666	694716	730810	603091	349914	68568	53082
BT2	BEL	None	6768007	6879374	6875041	6824266	6187035	5486958	5720243	5395452	5812071	5500042
	DEN	None	1992238	1913399	583988	116717	87890	100871	92708	104694	39730	78215
	ENG	None	8145405	7738242	3876855	3572791	4230884	4470070	3333673	3576089	2343694	2891909
	FRA	None	421964	853446	4091085	1214607	1372579	994258	1324297	1238613	1194714	1194714
	GBJ	None	2371	4882	1956	5180	14375	10346	0	0	0	0
	GER	None	2459026	2133383	1873683	1669870	2080593	2212397	1927398	1590823	1464163	1666322
	NED	None	59432149	56053900	51893123	48469166	45326214	45000599	39370689	38450313	27720830	28729727
	NIR	None	508905	775217	23215	20350	47517	16785	0	0	0	0
	SCO	None	5345438	6049219	4584209	3766255	4610314	4185264	3109683	2800641	1354776	560729
GN1	BEL	None	61831	102091	93282	128220	106865	108149	99327	89973	94133	110981
	DEN	None	4705094	4440151	3809195	2556357	2503663	2355996	2086597	1234706	1328785	1475494
	ENG	None	753234	732540	556773	342138	362508	308493	311045	182202	75938	188216
	FRA	None	209435	379103	2555591	622444	406304	289076	332356	448038	198741	197488
	GER	None	201693	125444	127983	191424	163665	273203	236585	152633	281182	235144
	NED	None	191569	177290	231998	460895	416025	387945	512022	521697	507733	419797
	SCO	None	32240	63254	47377	196852	197407	165644	293823	320785	417076	376332
	SWE	None	74029	81638	86574	102519	127286	89748	76409	58618	96877	81729
GT1	BEL	None	0	0	0	0	0	0	0	39856	32571	12430
	DEN	None	84092	128756	142976	143427	246854	240716	184802	98425	126223	197308
	ENG	None	64466	63557	46573	12387	10306	14525	17181	10999	22498	18440
	FRA	None	930090	1991403	12351030	3383987	3426003	4121419	5467522	5292713	3621742	3617988
	GER	None	0	0	0	0	0	0	1547	0	0	15444
	NED	None	0	0	0	0	0	0	0	0	740	26917
	SWE	None	15487	14298	16562	13801	16206	27824	56771	62309	63022	35363
LL1	BEL	None	0	0	0	0	0	0	0	0	1833	0
	DEN	None	297384	370229	299245	128939	85345	44687	45289	18078	27772	30722
	ENG	None	386865	158207	324102	147068	115019	182590	95139	53675	45863	42923
	FRA	None	60794	106509	1364664	144804	163370	97311	114742	162573	214566	214566
	NIR	None	0	0	8856	0	0	0	0	0	0	0
	SCO	None	78368	88759	104086	57463	4350	0	7542	1487	276674	620890
	SWE	None	11727	32712	44736	32305	44221	42904	123481	165019	53381	11352

Table 6.3.1.1 cont

GEAR	MS	SPECON	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
TR1	BEL	None	0	0	0	0	1479	0	0	154649	191516	218152
	DEN	None	11379939	11703482	11764564	8054769	7154017	7853341	7402801	5385763	5347921	5120432
	ENG	CPart13	0	0	0	0	0	0	0	0	0	2145727
	ENG	None	5137350	4406304	3530732	2375456	1498089	1256186	1824680	1501767	1851664	0
	FRA	None	2245186	2622863	15577633	3170363	2142734	1664330	2337819	2217998	2367370	2293408
	GBJ	None	15071	0	11704	0	0	0	0	0	0	0
	GER	CPart13	0	0	0	0	0	0	0	0	0	927872
	GER	None	2138685	1864235	2262351	1895838	1719696	2166578	2436727	2041064	1774792	891953
	IRL	None	0	0	0	1847	0	0	0	0	0	0
	NED	None	2213967	1477279	1506424	689783	593232	547564	532260	648039	1411644	1325312
	NIR	CPart13	0	0	0	0	0	0	0	0	0	56140
	NIR	None	0	5500	4235	0	16948	70711	51951	61460	49104	0
	SCO	CPart13	0	0	0	0	0	0	0	0	0	12245575
	SCO	None	33746963	30655450	24340540	16080003	12684328	12158294	11661338	11022980	12176291	0
	SWE	None	1498271	1510948	1297755	553332	470803	496754	292520	357841	426261	255594
TR2	BEL	None	0	0	0	0	496560	320116	344889	274177	405851	537598
	DEN	None	5808619	5192561	6492360	7650904	8088391	5913518	4689098	3433945	3310190	3394115
	ENG	CPart13	0	0	0	0	0	0	0	0	0	1910232
	ENG	None	1284006	1165866	1117646	2098696	1976703	2187597	1892451	1769650	1959629	0
	FRA	None	4247285	9746524	50542846	14148619	14841436	13427913	15039806	14783135	11987027	11741004
	GBG	None	0	3977	0	0	0	0	0	0	0	0
	GBJ	CPart13	0	0	0	0	0	0	0	0	0	7480
	GBJ	None	32102	42567	19716	27897	20201	24143	10560	13420	9680	0
	GER	CPart13	0	0	0	0	0	0	0	0	0	2420
	GER	None	256294	261824	299432	1040874	905330	704404	771597	680681	457259	471414
	IOM	None	272	0	0	0	0	0	0	0	0	0
	IRL	None	0	0	0	54	884	0	0	0	0	0
	NED	None	606370	951657	1208641	2089748	1813096	1643732	1512140	1819497	2482280	1937751
	NIR	CPart13	0	0	0	0	0	0	0	0	0	385631
	NIR	None	0	7480	23293	6784	12440	221904	532885	758972	409182	0
	SCO	CPart13	0	0	0	0	0	0	0	0	0	8344074
	SCO	None	4866397	5351836	8537672	10011344	9486074	9108230	8677821	8887263	9195955	0
	SWE	CPart11	0	0	0	0	0	0	0	0	0	766708
	SWE	None	2490761	2457593	2474133	2123136	1955220	1972039	2116735	2055318	2100952	774636
TR3	BEL	None	0	0	0	0	0	0	0	0	374	0
	DEN	None	5483357	3875643	3807654	3276080	3226366	2586161	1822500	846368	939474	607063
	ENG	None	6927	13345	4227	2075	7840	3315	6360	1472	492	82
	FRA	None	30358	48680	349684	76197	81511	106826	115612	138596	67827	66507
	GER	None	1783	4560	380	1028	0	0	772	884	4410	426
	NED	None	41031	35079	56873	59360	45942	43261	20649	20589	4038	274
	SCO	None	0	4172	0	6377	5460	2356	116	11896	0	33117
	SWE	None	7058	27109	1287	0	3330	1564	588	919	0	0
TOTAL			**179584520**	**177585500**	**238753533**	**155865711**	**146984766**	**140661559**	**134636420**	**124557438**	**108454286**	**106789120**

GEAR	MS	SPECON	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
None	BEL	None	1378514	1324600	985741	941471	317176	334870	324818	351950	371287	470639
	DEN	None	18294280	20552242	19474991	20229477	19521392	14271108	13578074	11140780	11175540	12149380
	ENG	None	3394422	3929575	4074331	4560595	4119945	4421690	3689029	4247158	3631637	3504530
	FRA	None	1374746	2272075	9743295	3324815	4422238	7598472	4984782	4015015	3057223	3058375
	GBG	None	39233	36568	27747	38013	38467	33150	63737	16061	59251	44798
	GBJ	None	108399	113892	51415	67837	82496	76607	67282	39276	10742	2675
	GER	None	7889892	7631592	7685993	8658165	8286975	8114776	7661336	7287880	6979402	6991131
	IOM	None	0	1323	0	0	0	11297	32920	44610	37483	59171
	IRL	None	262092	324436	485929	686082	788199	531848	355864	651878	557153	636518
	NED	None	10754625	10898134	11348194	13109204	12879582	11461062	10529501	10673913	8475129	9491670
	NIR	None	117904	227443	249612	333945	298629	180242	216731	216596	39502	10853
	SCO	None	7287223	5862795	6700256	7598255	8491327	5730399	4887631	5172780	4266354	5022640
	SWE	None	3941233	4361742	4530711	4324170	4358642	3760822	3456373	2782869	2898743	3977100
TOTAL UNREG			**54842563**	**57535917**	**65358215**	**63872029**	**63605068**	**56526343**	**49848078**	**46640766**	**41559446**	**45419480**
% REG			**77**	**76**	**79**	**71**	**70**	**71**	**73**	**73**	**72**	**70**

Table 6.3.1.2 Skagerrak, North Sea (Incl. 2EU), and Eastern Channel: Summary of trend in nominal effort (kW*days at sea) by country and by derogation 2000-2009 according to the cod plan gear definitions.

GEAR	SPECON	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	% rel. 2002	% rel. 2008
BT1	None	2812567	2691963	7506993	6101145	5383858	4952944	5600784	3618684	2105775	1779241	-76	-16
BT2	None	85075503	82401062	73803155	65659202	63957401	62477548	54878781	53156625	39929978	40621658	-45	2
GN1	None	6229125	6101511	7508773	4600849	4283723	3978254	3948164	2988652	3000465	3085181	-59	3
GT1	None	1094135	2198014	12557141	3553602	3699369	4404484	5727823	5504302	3866796	3923890	-69	1
LL1	None	835138	756416	2145689	510329	412305	367492	386193	400832	620089	920453	-57	48
TR1	CPart13	0	0	0	0	0	0	0	0	0	15375314		
TR1	None	58375432	54246061	60295938	32821391	26281326	26213758	26540096	23391561	25596563	10102851	-83	-61
TR2	CPart11	0	0	0	0	0	0	0	0	0	766708		
TR2	CPart13	0	0	0	0	0	0	0	0	0	10649837		
TR2	None	19592106	25181885	70715739	39198076	39596335	35523596	35587982	34476058	32518005	18856518	-73	-42
TR3	None	5570514	4008588	4220105	3421117	3370449	2743483	1966597	1020724	1016615	707469	-83	-30
Tot reg.		**179584520**	**177585500**	**238753533**	**155865711**	**146984766**	**140661559**	**134636420**	**124557458**	**108454286**	**106789120**	**-55**	**-2**
Tot non-reg		**54842563**	**57535917**	**65358215**	**63872029**	**63605068**	**56526343**	**49848078**	**46640766**	**41559446**	**45419480**	**-31**	**9**
% reg		**77**	**76**	**79**	**71**	**70**	**71**	**73**	**73**	**72**	**70**	**-11**	**-3**

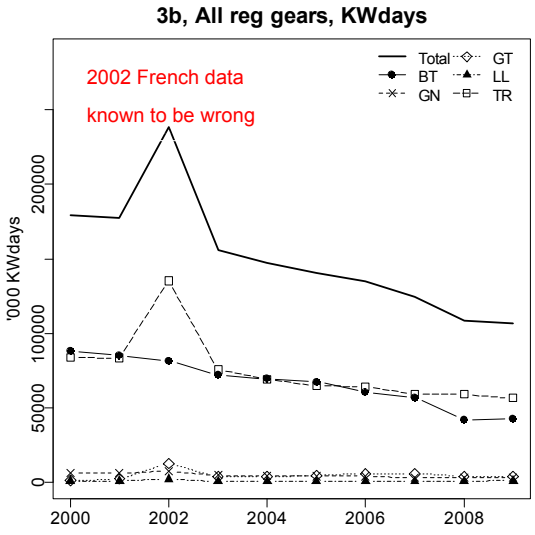


Figure 6.3.1.1. Area 3b (Skagerrak, North Sea & Eastern Channel), total effort by regulated gears.

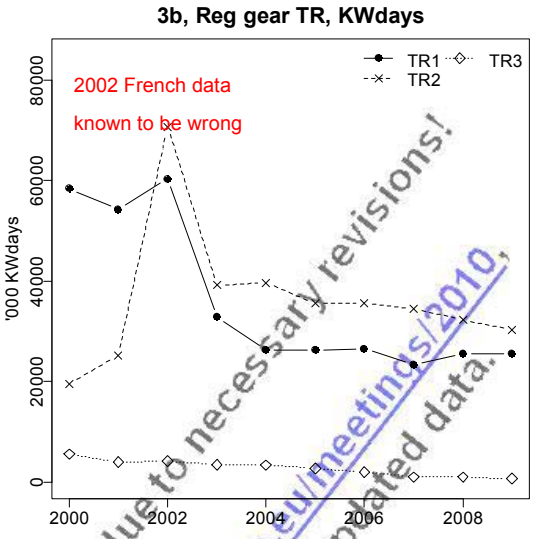


Figure 6.3.1.2. Area 3b (Skagerrak, North Sea & Eastern Channel), effort by regulated trawl gears.

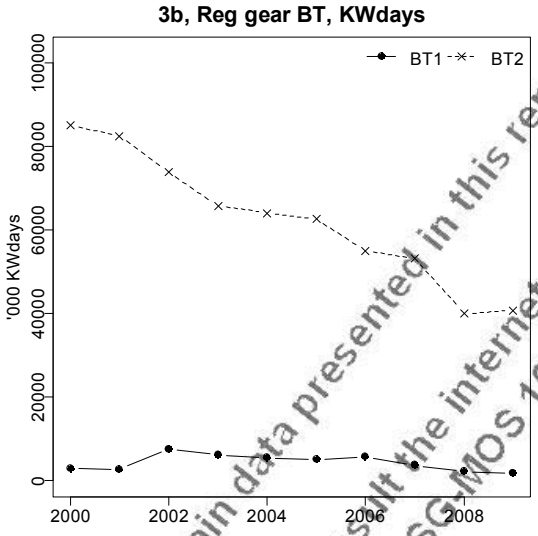


Figure 6.3.1.3. Area 3b (Skagerrak, North Sea & Eastern Channel), effort by regulated beam trawls.

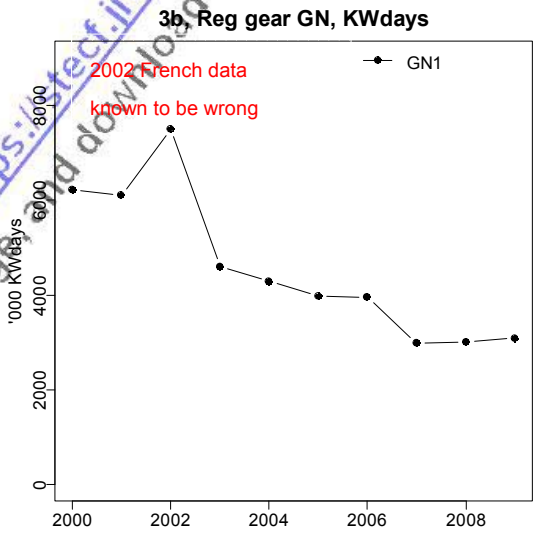


Figure 6.3.1.4. Area 3b (Skagerrak, North Sea & Eastern Channel), effort by regulated gillnetters.

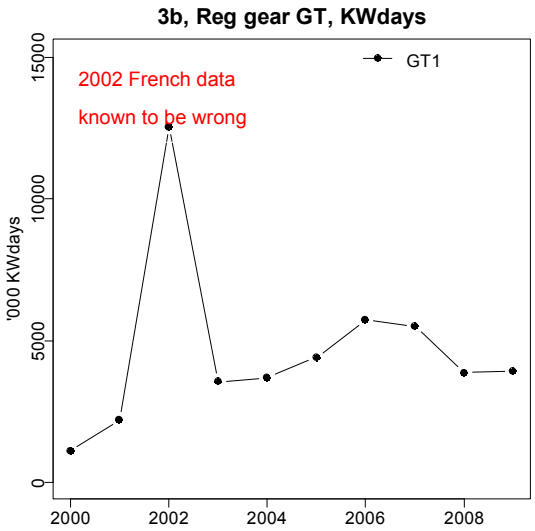


Figure 6.3.1.5. Area 3b (Skagerrak, North Sea & Eastern Channel), effort by regulated trammel netters.

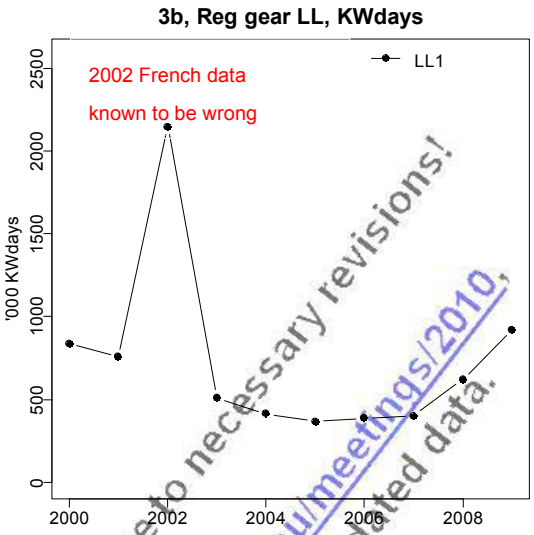


Figure 6.3.1.6. Area 3b (Skagerrak, North Sea & Eastern Channel), effort by regulated longliners.

6.3.2. Trend in catch estimates in weight and numbers at age by derogation in management area 2b: Skagerrak, North Sea (incl. 2EU), and Eastern Channel

Estimated landings and discards of cod, haddock, whiting, anglerfish, saithe, hake, *Nephrops*, plaice and sole by cod plan gear category for the whole area are given in Table 6.3.2.1. Detailed data on age compositions of landings and discards of cod, plaice and sole are not given in a table here, but are available on the web site: https://stecf.jrc.ec.europa.eu/meetings/2010?p_p_id=62_INSTANCE_Hk1G&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&p_p_col_id=column-2&p_p_col_count=1&_62_INSTANCE_Hk1G_struts_action=%2Fjournal_articles%2Fview&_62_INSTANCE_Hk1G_groupId=43805&_62_INSTANCE_Hk1G_articleId=44677&_62_INSTANCE_Hk1G_version=1.0

This year, a number of figures were included in the report, displaying total landings (white) and discards (grey – when available) in weight for all regulated gears from 2003 to 2009 (Figures 6.3.2.1), as well as in landings and discards in numbers at age for cod, plaice and sole (Figures 6.3.2.2 to 6.3.2.10).

Because of the limited availability and reliability of discard information for some species and from some countries contributing landings information to the dataset, care is required in the use of these data to draw firm conclusions about catch composition. In addition, the procedure used to raise discards and explained in section 5.3 may not be fully consistent with the procedures used in other contexts and therefore may not be directly comparable.

In TR1, cod landings have been kept remarkably constant over the period; haddock landings have slightly decreased, while plaice, saithe and whiting landings have increased. Whitefish landings in TR2 have globally decreased while Nephrops landings have increased. Catches of plaice and sole have significantly decreased in BT2. No clear trends were observed for GT1 with regards to sole, plaice and cod. Finally, an increasing part of the GN1 catches come from anglerfish, while catches of cod, plaice and sole are decreasing.

Age composition plots show high discarding of young cod ages 1 and 2 in 2006 and 2007, mostly in TR2 gear, but lower discard rates in 2008 and 2009.

The data show relatively high discard rates for sole from TR2 gears in some years. This was not the case for the same years in the previous report of this group, and in general discards of sole are low due to the high value of the species, hence these estimates are not considered realistic.

Table 6.3.2.1 Skagerrak, North Sea (Incl. 2EU), and Eastern Channel: Landings (t), discards (t) and relative discard rates in weight by species and regulated gear, 2003-2009.

SPECIES	GEAR	SPECON	2003.L	2003.D	2003.R	2004.L	2004.D	2004.R	2005.L	2005.D	2005.R	2006.L	2006.D	2006.R	2007.L	2007.D	2007.R	2008.L	2008.D	2008.R	2009.L	2009.D	2009.R
ANF	BT1	None	312	0	0	381	0	0	359	0	0	201	14	0.07	207	0	0	163	1	0.01	110	0	0
ANF	BT2	None	133	0	0	95	6	0.06	81	14	0.15	70	7	0.09	88	9	0.09	91	7	0.07	91	31	0.25
ANF	GN1	None	748	0	0	969	0	0	938	0	0	1092	0	0	1289	0	0	1464	0	0	1466	0	0
ANF	GT1	None	6	0	0	20	0	0	2	0	0	3	0	0	1	0	0	1	0	0	6	0	0
ANF	LL1	None	1	0	0	0	0	-	0	0	-	1	0	0	0	0	-	0	0	-	0	0	-
ANF	NONE	None	71	0	0	70	0	0	37	0	0	21	0	0	27	0	0	38	0	0	47	0	0
ANF	TR1	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	5737	0	0
ANF	TR1	None	5599	356	0.06	5499	404	0.07	7110	722	0.09	6950	494	0.07	7443	443	0.06	7670	346	0.04	1314	12	0.01
ANF	TR2	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	1227	0	0
ANF	TR2	None	1942	20	0.01	1890	2	0	1944	8	0	1861	27	0.01	1728	31	0.02	1856	25	0.01	363	1	0
ANF	TR3	None	61	0	0	98	0	0	27	0	0	11	0	0	11	0	0	2	0	0	0	0	-
ARU	GN1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
ARU	NONE	None	61	0	0	481	0	0	4	0	0	6	0	0	0	0	-	1	0	0	2	0	0
ARU	TR1	None	12	0	0	6	0	0	5	0	0	2	0	0	0	0	-	0	0	-	0	0	-
ARU	TR2	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
ARU	TR2	None	0	0	-	0	0	-	0	0	-	0	1	1	0	0	-	0	0	-	0	0	-
ARU	TR3	None	109	0	0	30	0	0	164	0	0	163	0	0	237	0	0	21	0	0	4	0	0
BLI	BT1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
BLI	BT2	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
BLI	GN1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
BLI	GT1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
BLI	NONE	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
BLI	TR1	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	16	0	0
BLI	TR1	None	19	182	0.91	17	49	0.74	6	30	0.83	7	11	0.61	7	2	0.22	12	10	0.45	1	0	0
BLI	TR2	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	3	1
BSF	BT2	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
BSF	NONE	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
BSF	TR1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
COD	BT1	None	675	0	0	1183	0	0	1121	0	0	1000	335	0.25	689	0	0	337	212	0.39	230	0	0
COD	BT2	None	3395	1	0	2415	1427	0.37	2198	749	0.25	2260	434	0.16	2085	218	0.09	2619	940	0.26	2332	422	0.15
COD	GN1	None	3415	3	0	4038	3	0	3741	10	0	3227	0	0	2422	0	0	2518	0	0	2873	0	0
COD	GT1	None	498	0	0	341	0	0	342	0	0	345	0	0	346	0	0	374	0	0	469	0	0
COD	LL1	None	211	0	0	127	0	0	110	0	0	122	0	0	112	0	0	95	0	0	127	0	0
COD	NONE	None	467	33	0.07	348	50	0.13	358	2606	0.88	275	32	0.1	174	194	0.53	231	3807	0.94	431	3	0.01
COD	TR1	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	9970	6055	0.38
COD	TR1	None	11524	1522	0.12	10484	1713	0.14	11513	1950	0.14	11312	2802	0.2	10650	6673	0.39	11390	14083	0.55	6601	1607	0.2
COD	TR2	CPart11	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	4	1
COD	TR2	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	537	1310	0.71
COD	TR2	None	4467	2546	0.36	3765	3571	0.49	3442	3294	0.49	3073	4759	0.61	3110	8168	0.72	2921	4589	0.61	2788	3516	0.56
COD	TR3	None	51	0	0	28	0	0	31	0	0	30	0	0	4	0	0	58	0	0	2	0	0
CYO	GN1	None	10	0	0	1	0	0	1	0	0	0	0	-	0	0	-	0	0	-	0	0	-
CYO	TR1	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
CYO	TR1	None	0	0	-	0	0	-	0	0	-	0	0	-	2	0	0	0	0	-	0	0	-
CYP	TR1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
ETX	NONE	None	7	0	0	0	0	-	0	0	-	0	0	-	0	0	-	4	0	0	0	0	-
ETX	TR1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
ETX	TR3	None	33	0	0	6	0	0	16	0	0	7	0	0	9	0	0	42	0	0	0	0	-
FOX	BT2	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
FOX	GN1	None	2	0	0	0	0	-	0	0	-	3	0	0	1	0	0	1	0	0	0	0	-
FOX	LL1	None	0	0	-	0	0	-	0	0	-	2	0	0	0	0	-	0	0	-	0	0	-
FOX	TR1	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	2	0	0
FOX	TR1	None	5	0	0	3	0	0	3	0	0	2	0	0	1	0	0	0	0	-	0	0	-

Table 6.3.2.1 cont

SPECIES	GEAR	SPECON	2003.L	2003.D	2003.R	2004.L	2004.D	2004.R	2005.L	2005.D	2005.R	2006.L	2006.D	2006.R	2007.L	2007.D	2007.R	2008.L	2008.D	2008.R	2009.L	2009.D	2009.R
GUP	GN1	None	8	0	0	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
GUP	TR1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
GUQ	GN1	None	5	0	0	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
GUQ	NONE	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
GUQ	TR1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
GUQ	TR2	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
HAD	BT1	None	331	0	0	304	0	0	127	0	0	80	2	0.02	118	0	0	54	0	0	34	0	0
HAD	BT2	None	168	8	0.05	127	6	0.05	59	15	0.2	14	3	0.18	15	2	0.12	19	9	0.32	11	0	0
HAD	GN1	None	221	88	0.28	165	0	0	97	0	0	77	0	0	57	0	0	48	0	0	37	0	0
HAD	GT1	None	3	0	0	4	0	0	2	0	0	1	0	0	1	0	0	1	0	0	2	0	0
HAD	LL1	None	72	0	0	20	0	0	21	0	0	55	0	0	7	0	0	3	0	0	14	0	0
HAD	NONE	None	369	141	0.28	176	48	0.21	96	48	0.33	213	102	0.32	60	56	0.48	55	19	0.26	46	33	0.42
HAD	TR1	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	25115	3612	0.13
HAD	TR1	None	34161	18670	0.35	40007	9877	0.2	40662	4246	0.09	31391	7318	0.19	26344	16200	0.38	26210	6736	0.2	2334	255	0.1
HAD	TR2	CPart11	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	1	1
HAD	TR2	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	3273	5537	0.63
HAD	TR2	None	5361	5652	0.51	5047	3469	0.41	4825	2752	0.36	3961	8873	0.69	3251	13930	0.81	3415	6585	0.66	711	471	0.4
HAD	TR3	None	202	5	0.02	93	1	0.01	53	1	0.02	280	0	0	5	0	0	109	0	0	1	0	0
HKE	BT1	None	49	0	0	78	0	0	70	0	0	59	0	0	60	0	0	39	0	0	24	0	0
HKE	BT2	None	14	0	0	15	2	0.12	19	2	0.1	10	5	0.33	19	0	0	10	0	0	7	0	0
HKE	GN1	None	510	0	0	477	0	0	531	0	0	596	0	0	336	0	0	375	0	0	419	0	0
HKE	GT1	None	1	0	0	1	0	0	3	0	0	1	0	0	1	0	0	17	0	0	6	0	0
HKE	LL1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	1182	0	0	2311	0	0
HKE	NONE	None	29	0	0	27	0	0	26	142	0.85	24	0	0	18	3	0.14	22	6	0.21	32	2	0.06
HKE	TR1	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	2060	90	0.04
HKE	TR1	None	661	254	0.28	875	327	0.27	1048	455	0.3	1442	412	0.22	2030	402	0.17	3076	425	0.12	1743	198	0.1
HKE	TR2	CPart11	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	1	5	0.83
HKE	TR2	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	108	0	0
HKE	TR2	None	288	78	0.21	462	69	0.13	317	396	0.56	291	554	0.66	344	666	0.66	575	415	0.42	430	330	0.43
HKE	TR3	None	5	0	0	38	0	0	33	0	0	12	0	0	8	0	0	0	0	-	0	0	-
MAC	BT1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
MAC	BT2	None	33	0	0	10	0	0	30	0	0	3	0	0	4	0	0	1	0	0	1	0	0
MAC	GN1	None	49	0	0	43	0	0	32	0	0	27	0	0	26	0	0	45	0	0	102	0	0
MAC	GT1	None	3	0	0	5	0	0	9	0	0	13	0	0	10	2	0.17	1	0	0	1	0	0
MAC	LL1	None	108	0	0	99	0	0	193	0	0	372	0	0	218	0	0	354	0	0	345	0	0
MAC	NONE	None	106896	0	0	107645	0	0	84656	8559	0.09	66077	115	0	92166	0	0	86982	577	0.01	106404	0	0
MAC	TR1	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	18	3	0.14
MAC	TR1	None	58	7960	0.99	44	2776	0.98	26	1373	0.98	8	156	0.95	15	165	0.92	16	1549	0.99	71	2419	0.97
MAC	TR2	CPart11	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
MAC	TR2	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	19	243	0.93
MAC	TR2	None	5641	77	0.01	5533	27	0	4376	767	0.15	4399	2267	0.34	2603	1409	0.35	3521	9310	0.73	3674	4148	0.53
MAC	TR3	None	795	0	0	2443	0	0	577	0	0	582	0	0	148	0	0	69	0	0	45	0	0
NEP	BT1	None	3	0	0	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	1	0	0
NEP	BT2	None	38	0	0	40	0	0	77	8	0.09	59	0	0	93	0	0	31	0	0	86	0	0
NEP	GN1	None	1	0	0	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
NEP	GT1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	1	0	0
NEP	LL1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
NEP	NONE	None	355	0	0	162	0	0	449	60	0.29	160	0	0	149	6	0.04	191	6	0.03	160	5	0.03
NEP	TR1	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	950	0	0
NEP	TR1	None	1711	669	0.28	1292	406	0.24	2087	580	0.22	2026	443	0.18	1837	439	0.19	1582	360	0.19	535	196	0.27
NEP	TR2	CPart11	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	399	319	0.44
NEP	TR2	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	19653	0	0
NEP	TR2	None	13862	15494	0.53	14190	15055	0.47	19334	23972	0.55	21336	31169	0.59	21912	25570	0.54	20597	20795	0.5	4096	6645	0.62
NEP	TR3	None	17	0	0	16	0	0	5	0	0	20	0	0	11	0	0	0	0	-	10	0	0

Table 6.3.2.1 cont

SPECIES	GEAR	SPECON	2003.L	2003.D	2003.R	2004.L	2004.D	2004.R	2005.L	2005.D	2005.R	2006.L	2006.D	2006.R	2007.L	2007.D	2007.R	2008.L	2008.D	2008.R	2009.L	2009.D	2009.R
PLE	BT1	None	7158	241	0.03	6180	0	0	5113	0	0	7713	115	0.01	5242	0	0	3012	63	0.02	3566	0	0
PLE	BT2	None	43127	43729	0.5	41586	34803	0.46	37769	28309	0.43	35841	28072	0.44	34829	25142	0.42	31634	23053	0.42	33858	37410	0.52
PLE	GN1	None	4501	397	0.08	2958	336	0.1	2736	528	0.16	2915	0	0	1523	548	0.26	1730	253	0.13	1882	8617	0.82
PLE	GT1	None	1001	0	0	1273	0	0	1461	0	0	1340	0	0	987	0	0	665	9	0.01	1168	0	0
PLE	LL1	None	1	0	0	11	0	0	1	0	0	2	0	0	0	0	-	0	0	-	1	0	0
PLE	NONE	None	753	0	0	237	0	0	264	45	0.15	138	0	0	136	483	0.78	62	0	0	84	5	0.06
PLE	TR1	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	5042	1101	0.18
PLE	TR1	None	6817	1938	0.22	7836	1482	0.16	7904	632	0.07	11389	2115	0.16	9672	1340	0.12	14605	1292	0.08	10877	865	0.07
PLE	TR2	CPart11	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	2	32	0.94
PLE	TR2	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	1132	2618	0.7
PLE	TR2	None	9294	10302	0.53	8820	7118	0.45	5698	6799	0.54	4945	8391	0.63	4380	2852	0.39	4655	2926	0.39	4431	2291	0.34
PLE	TR3	None	43	0	0	22	0	0	19	0	0	26	0	0	6	0	0	1	0	0	2	0	0
POK	BT1	None	31	0	0	15	0	0	9	0	0	11	0	0	11	0	0	4	2	0.33	1	0	0
POK	BT2	None	3	0	0	9	0	0	0	0	-	1	0	0	0	0	-	0	0	-	0	0	-
POK	GN1	None	148	0	0	106	0	0	87	0	0	71	0	0	49	0	0	45	0	0	72	0	0
POK	GT1	None	7	0	0	3	0	0	3	0	0	4	0	0	2	0	0	2	0	0	10	0	0
POK	LL1	None	14	0	0	19	0	0	4	0	0	17	0	0	5	0	0	4	0	0	8	0	0
POK	NONE	None	704	465	0.4	1009	872	0.46	860	17	0.02	1037	0	0	340	17	0.05	763	215	0.22	581	336	0.37
POK	TR1	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	21977	37	0
POK	TR1	None	35618	34965	0.5	32684	24498	0.43	35266	14845	0.3	43441	12837	0.23	39443	33161	0.46	46163	4389	0.09	25785	346	0.01
POK	TR2	CPart11	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
POK	TR2	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	363	0	0
POK	TR2	None	3332	768	0.19	3390	1130	0.25	3461	1238	0.26	3625	767	0.17	2629	651	0.2	3517	677	0.16	2986	234	0.07
POK	TR3	None	379	0	0	324	9	0.03	170	0	0	132	0	0	47	0	0	17	0	0	1	0	0
RAJ	BT1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
RAJ	GN1	None	1	0	0	1	0	0	1	0	0	1	0	0	0	0	-	1	0	0	1	0	0
RAJ	GT1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
RAJ	LL1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
RAJ	NONE	None	2	0	0	14	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0
RAJ	TR1	None	26	1798	0.99	22	2261	0.99	22	2276	0.99	25	2449	0.99	25	1697	0.99	23	1801	0.99	27	1458	0.98
RAJ	TR2	None	25	850	0.97	18	670	0.97	9	1088	0.99	7	1373	0.99	4	1236	1	3	556	0.99	5	476	0.99
RAJ	TR3	None	2	0	0	10	0	0	1	0	0	0	0	-	0	0	-	0	0	-	0	0	-
RNG	BT1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
RNG	GN1	None	0	0	-	1	0	0	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
RNG	NONE	None	352	0	0	1879	0	0	787	58171	0.99	49	0	0	0	0	-	0	1	1	0	0	-
RNG	TR1	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
RNG	TR1	None	14	0	0	0	0	-	0	0	-	0	9	1	0	1	1	0	5	1	0	0	-
RNG	TR2	None	1	22	0.96	6	378	0.98	1	27	0.96	0	493	1	0	0	-	0	148	1	0	104	1
RNG	TR3	None	507	0	0	1459	0	0	337	0	0	15	0	0	0	0	-	0	0	-	0	0	-
SOL	BT1	None	105	0	0	75	0	0	42	0	0	52	0	0	30	0	0	24	0	0	26	0	0
SOL	BT2	None	18943	1998	0.1	19294	2598	0.12	16225	1344	0.08	12920	1419	0.1	15365	862	0.05	13983	605	0.04	14036	1625	0.1
SOL	GN1	None	863	0	0	714	0	0	790	0	0	707	0	0	536	36	0.06	713	16	0.02	905	62	0.06
SOL	GT1	None	2124	0	0	1948	0	0	2169	0	0	2010	0	0	2162	77	0.03	2054	7	0	2068	19	0.01
SOL	LL1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
SOL	NONE	None	248	0	0	191	58	0.23	215	0	0	87	0	0	60	0	0	69	0	0	81	0	0
SOL	TR1	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	10	0	0
SOL	TR1	None	27	0	0	19	2	0.1	18	0	0	30	20	0.4	29	0	0	34	0	0	22	0	0
SOL	TR2	CPart11	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	1	0	0
SOL	TR2	CPart13	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	107	8	0.07
SOL	TR2	None	896	49	0.05	801	488	0.38	568	3	0.01	728	3619	0.83	775	217	0.22	801	45	0.05	740	2088	0.74
SOL	TR3	None	2	0	0	1	0	0	2	0	0	0	0	-	1	0	0	6	0	0	6	0	0

Table 6.3.2.1 cont

SPECIES	GEAR	SPECON	2003.L	2003.D	2003.R	2004.L	2004.D	2004.R	2005.L	2005.D	2005.R	2006.L	2006.D	2006.R	2007.L	2007.D	2007.R	2008.L	2008.D	2008.R	2009.L	2009.D	2009.R
WHB	GN1	None	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
WHB	GT1	None	8	0	0	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-	0	0	-
WHB	NONE	None	31831	0	0	50404	0	0	14509	0	0	6561	0	0	3298	0	0	384	0	0	271	0	0
WHB	TR1	None	206	0	0	0	0	-	87	0	0	0	0	-	0	0	-	0	0	-	0	0	-
WHB	TR2	None	49	0	0	0	0	-	4	0	0	0	0	-	0	0	-	0	0	-	0	0	-
WHB	TR3	None	12535	0	0	12613	0	0	8217	0	0	1834	0	0	3057	0	0	77	0	0	2	0	0
WHG	BT1	None	16	0	0	6	0	0	3	0	0	6	1	0.14	3	0	0	1	0	0	1	0	0
WHG	BT2	None	346	5782	0.94	243	3170	0.93	222	317	0.59	214	195	0.48	134	535	0.8	152	727	0.83	509	341	0.4
WHG	GN1	None	22	0	0	7	0	0	8	0	0	10	0	0	15	0	0	3	0	0	5	0	0
WHG	GT1	None	28	0	0	25	0	0	34	0	0	21	2	0.09	13	7	0.35	10	19	0.66	12	0	0
WHG	LL1	None	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WHG	NONE	None	1192	435	0.51	989	52	0.07	685	5356	1.67	649	9	0.36	1057	4	0.01	1076	9343	0.94	1443	7939	0.9
WHG	TR1	CPart13																			6542	1913	0.23
WHG	TR1	None	5133	3946	0.43	4424	4284	0.49	5385	2167	0.29	7510	1604	0.18	8268	1928	0.19	7762	2129	0.22	188	140	0.42
WHG	TR2	CPart11																				6	1
WHG	TR2	CPart13																			2005	1154	0.37
WHG	TR2	None	10296	51493	0.83	8351	26342	0.76	8258	20449	0.71	9858	15471	0.61	9376	7690	0.45	8246	13964	0.63	6090	14313	0.7
WHG	TR3	None	981	0	0	522	3	0.01	637	0	0	1632	0	0	311	0	0	129	0	0	196	0	0

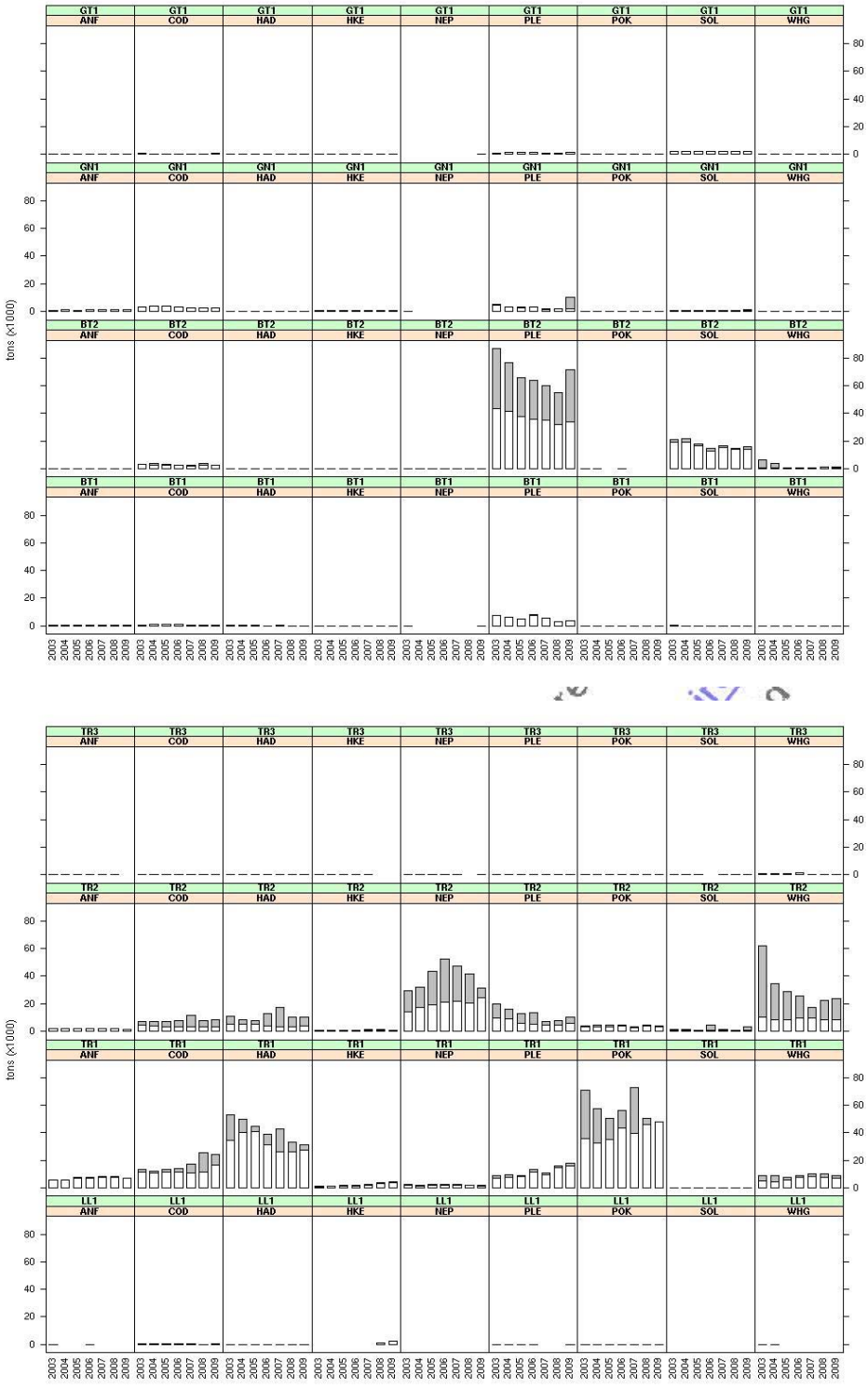


Figure 6.2.3.1; Estimated landings (white bars) and discards (grey bars) of targets species by regulated gears in management area 3b (North Sea, Skagerrak, Eastern Channel, 2EU).

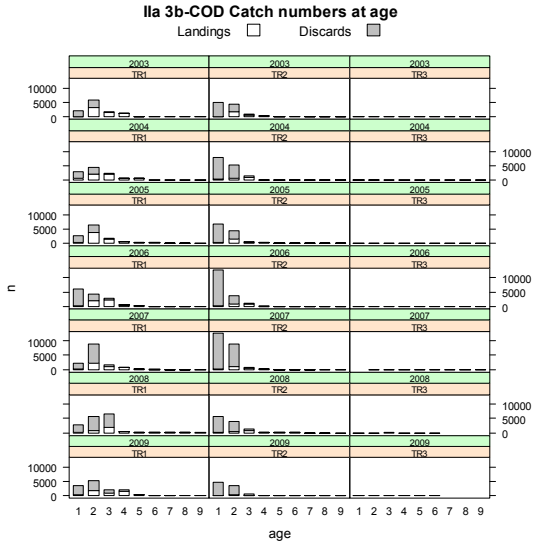


Figure 6.3.2.2. Area 3b (Skagerrak, North Sea & Eastern Channel), COD landings and discards at age in number by TR gears.

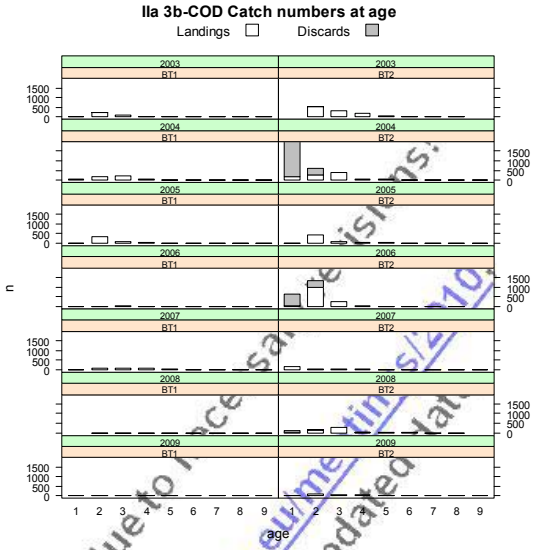


Figure 6.3.2.3. Area 3b (Skagerrak, North Sea & Eastern Channel), COD landings and discards at age in number by BT gears.

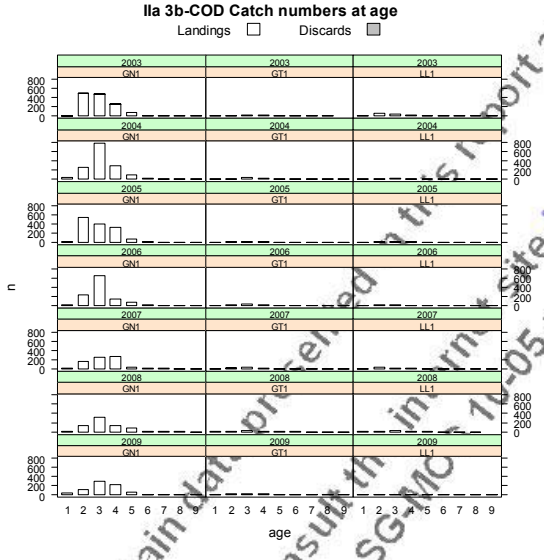


Figure 6.3.2.4. Area 3b (Skagerrak, North Sea & Eastern Channel), COD landings and discards at age in number by static gears.

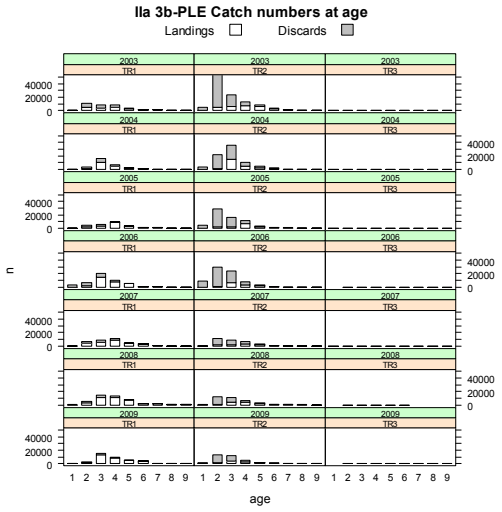


Figure 6.3.2.5. Area 3b (Skagerrak, North Sea & Eastern Channel), PLE landings and discards at age in number by TR gears.

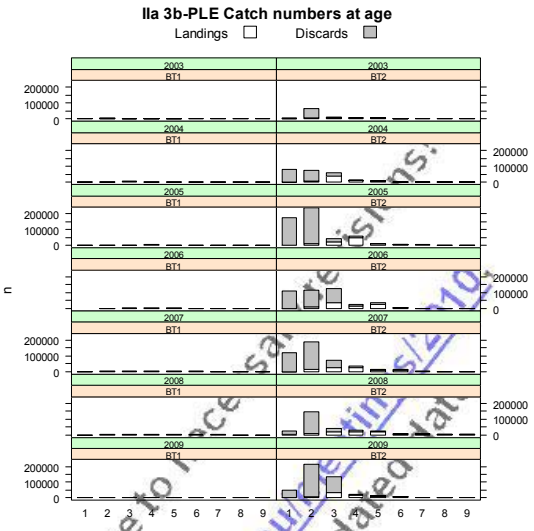


Figure 6.3.2.6. Area 3b (Skagerrak, North Sea & Eastern Channel), PLE landings and discards at age in number by BT gears .

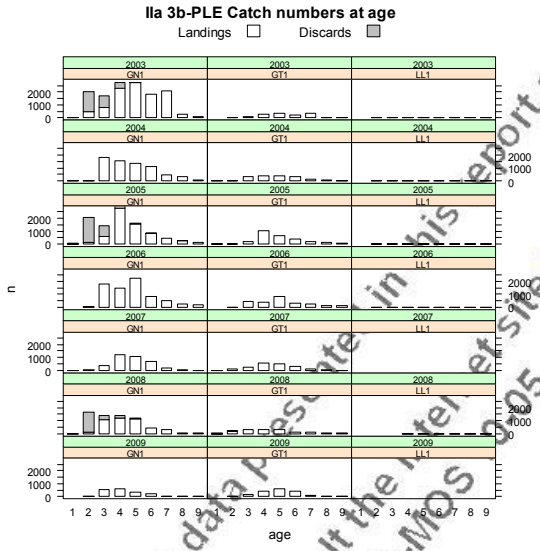


Figure 6.3.2.7. Area 3b (Skagerrak, North Sea & Eastern Channel), PLE landings and discards at age in number by static gears.

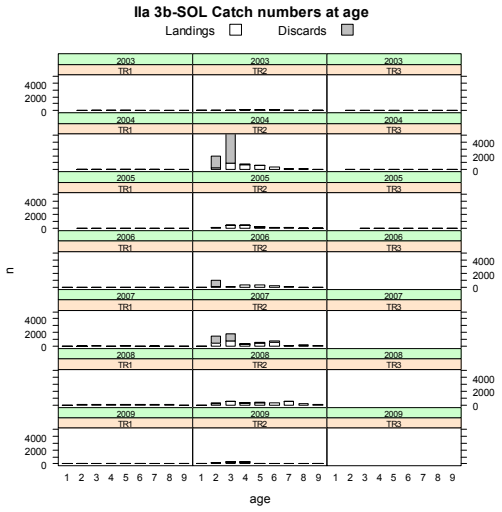


Figure 6.3.2.8. Area 3b (Skagerrak, North Sea & Eastern Channel), SOL landings and discards at age in number by TR gears.

Figure 6.3.2.10. Area 3b (Skagerrak, North Sea & Eastern Channel), SOL landings and discards at age in number by BT gears.

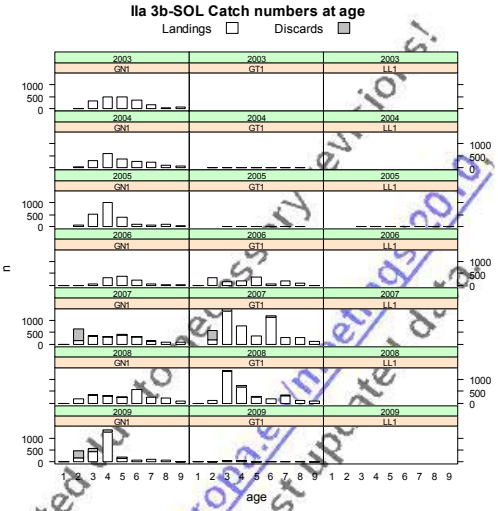
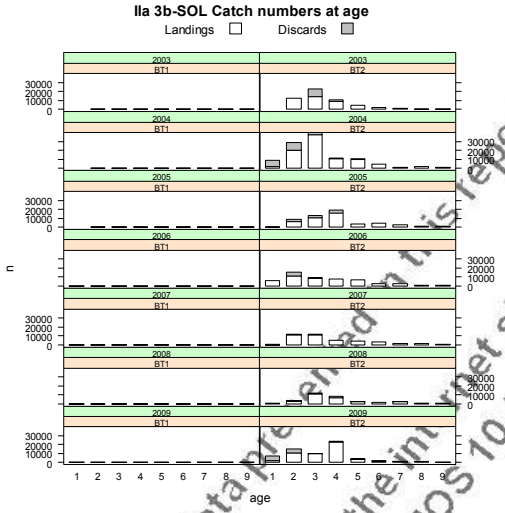


Figure 6.3.2.9. Area 3b (Skagerrak, North Sea & Eastern Channel), SOL landings and discards at age in number by static gears



6.3.3. Trend in CPUE of cod, sole and plaice by derogation in management area 2b: Skagerrak, North Sea (incl. 2EU), and Eastern Channel

Catch rates of cod, plaice and sole in g/KW-day for cod categories are given in Tables 6.3.3.1-6.3.3.3. In some cases the figures refer only to landings, depending on whether discard data were available. In the context of possible effort management measures, it is useful to summarise the impact of each gear category in terms of the relative quantity removed per unit of effort. Using this approach, the CPUE for a given gear, when compared with the CPUE of another gear for the same period, can be used as a proxy for the relative fishing power of the gear. Therefore, the gear categories are ranked with regards to highest 2009 CPUE for cod, plaice and sole are indicated in the Tables. In addition, CPUE and LPUE by year are plotted (Figures 6.3.3.1) by species for the first four gear categories (when ranked by 2003-2009 average).

For cod (Table 6.3.3.1), GN1 has usually been the gear with largest catch rate, with a stable CPUE around 1kg/kWday. However, the catch rate for TR1 gear has increased over the time period, and was up at the same level than GN1 in 2008. However, it should be remembered that it is problematic to define effort for static gears, hence defining effort in terms of kilowatt-days may not adequately capture fishing activity by

gillnetters. The ranking also indicates that longliners and trammel netters are also rather efficient at capturing cod, though again, the caveat about definition of effort for static gears also applies in these cases, and neither gear is used very much in the area.

It should be noted that plaice and sole in the Skagerrak (which is categorised as part of management area 3b) are considered as part of the same stocks as plaice and sole in the Kattegat (management area 3a). Both stocks are considered as being distinct from the North Sea stock, as are plaice and sole in the Eastern Channel (another part of 3b). As a result, the CPUE data for plaice and sole in area 3b cover three different stocks of each species so need to be interpreted with care. The most efficient gear for the capture of plaice (Table 6.3.3.2) is indicated to be large mesh beam trawlers BT1 and BT2, closely followed by the gillnet category GN1. In general however, the differences in mean catch rates between all main different gear types are relatively small. For sole (Table 6.3.3.3), the most efficient gears for the capture of sole has consistently been trammel nets (GT1), followed by small-mesh beam trawls (BT2) and gillnets (GN1).

Table 6.3.3.1 Skagerrak, North Sea (incl. 2EU) and Eastern Channel. Cod CPUE (g/(kW*days)) by gear category and year, 2003-2009, sorted in descending order with regards to CPUE 2009.

AREA	GEAR	CPUE 2003	CPUE 2004	CPUE 2005	CPUE 2006	CPUE 2007	CPUE 2008	CPUE 2009
3b	TR1	449	527	569	596	844	1121	1033
3b	GN1	743	946	943	818	811	840	931
3b	GT1	565	501	369	325	268	451	848
3b	TR2	219	257	254	293	405	296	463
3b	LL1	413	306	299	316	282	153	137
3b	BT1	163	288	269	313	209	292	129
3b	BT2	53	63	49	51	44	92	68
3b	NONE	74	78	44	75	14	56	66
3b	DEM_SEINE	38	0	130	1161	77	NA	62
3b	OTTER	26	22	297	26	51	470	22
3b	BEAM	3	2	2	1	2	2	8
3b	TR3	15	8	11	15	4	57	3
3b	PEL_TRAWL	1	0	1	1	0	1	3
3b	POTS	4	5	5	5	3	2	2
3b	PEL_SEINE	NA	0	4	1	NA	0	0
3b	DREDGE	0	0	0	0	1	0	0

Table 6.3.3.2. Skagerrak, North Sea (incl. 2EU) and Eastern Channel. Plaice CPUE (g/(kW*days)) by gear category and year, 2003-2009, sorted in descending order with regards to CPUE 2009.

AREA	GEAR	CPUE 2003	CPUE 2004	CPUE 2005	CPUE 2006	CPUE 2007	CPUE 2008	CPUE 2009
3b	GN1	1065	771	820	738	693	661	3403
3b	GT1	1823	1792	1594	1488	1085	771	2117
3b	BT1	1190	1102	988	1324	1379	1316	2004
3b	BT2	1321	1180	1048	1158	1112	1344	1754
3b	TR1	286	375	348	532	515	677	1487
3b	TR2	686	584	509	543	281	304	492
3b	DEM_SEINE	189	NA	0	2321	NA	NA	93
3b	NONE	174	153	88	75	87	21	23
3b	OTTER	25	6	17	5	84	2	2
3b	DREDGE	1	1	6	2	0	2	2
3b	BEAM	17	6	6	4	3	1	2
3b	TR3	13	6	7	13	6	0	1
3b	PEL_TRAWL	3	1	1	1	0	1	1
3b	LL1	2	27	3	5	0	0	1
3b	POTS	0	0	0	0	0	0	0
3b	PEL_SEINE	NA	0	0	0	NA	0	0

Table 6.3.3.3. Skagerrak, North Sea (incl. 2EU) and Eastern Channel. Sole CPUE (g/(kW*days)) by gear category and year, 2003-2009, sorted in descending order with regards to CPUE 2009.

AREA	GEAR	CPUE 2003	CPUE 2004	CPUE 2005	CPUE 2006	CPUE 2007	CPUE 2008	CPUE 2009
3b	GT1	236	156	178	64	167	209	3717
3b	BT2	333	360	295	272	314	376	386
3b	GN1	187	167	198	179	192	243	314
3b	TR2	35	48	24	188	42	37	210
3b	BT1	13	14	9	9	9	12	15
3b	NONE	123	150	4	6	3	14	11
3b	TR3	1	0	1	0	1	5	7
3b	TR1	1	1	1	2	1	1	3
3b	OTTER	7	5	12	5	3	2	2
3b	DREDGE	1	0	7	2	1	1	2
3b	BEAM	5	7	3	1	2	1	2
3b	PEL_TRAWL	1	1	1	1	0	1	1
3b	POTS	0	0	0	0	1	0	0
3b	LL1	0	0	0	0	NA	0	0
3b	DEM_SEINE	0	NA	NA	NA	NA	NA	NA

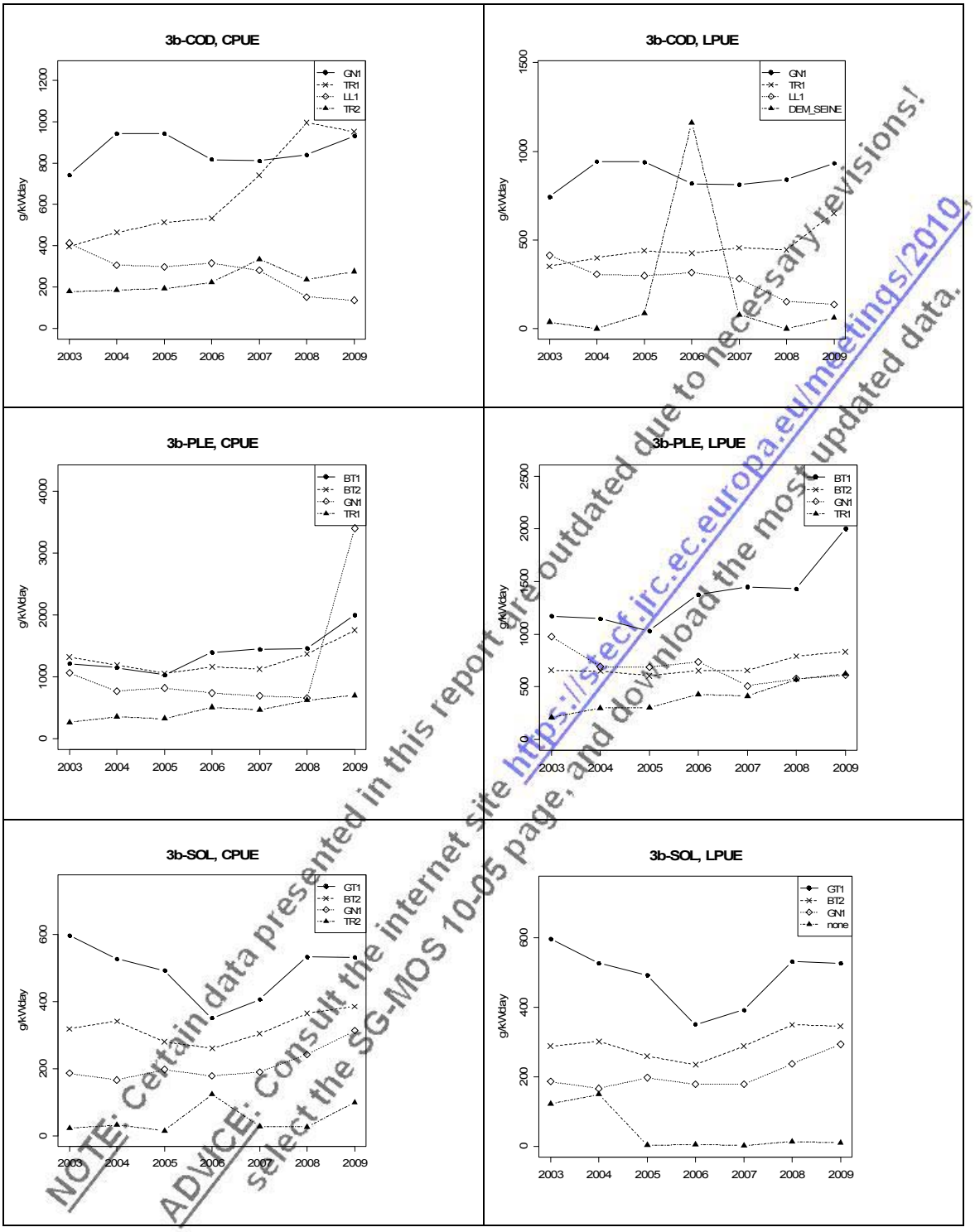


Figure 6.3.3.1 CPUE and LPUE (cod, plaice and sole) by year for the first four gear categories (when ranked by 2003-2009 average)

6.3.4. Ranked derogations according to cod, sole and plaice catches in management area 2b: Skagerrak, North Sea (incl. 2EU), and Eastern Channel

Gear categories are ranked according to their catch and landings in weight of cod, plaice and sole in Tables 6.3.4.1 and 6.3.4.2 respectively.

For cod, discard data are available for most of the major gear categories. Gear category TR1 (>100 mm mesh size) has generally represented around half of both landings and catches, with the share increasing over time. The share of TR2 in landings has been stable around 15%, but in terms of total catches the proportion removed by this gear can be higher due to large discarding of young cod.

For both plaice and sole, beam trawlers using small mesh size (BT2) are much more important than other gear categories in terms of both landings and catches removed, with a share of around 60% for plaice and 80% for sole. It should be noted that plaice and sole in the Skagerrak (regulated area 2b1) are considered as part of the same stocks as plaice and sole in the Kattegat (regulated area 2a). Both stocks are considered as being distinct from the North Sea stock, as are plaice and sole in the Eastern Channel (2b3). As a result, the derogation rankings for these species need to be interpreted with caution.

Table 6.3.4.1 Skagerrak, North Sea including 2 EU and Eastern Channel: Ranked categories according to relative cod, plaice and sole catches in weight in area 3b, 2003-2009. Ranking is according to the year 2009.

ANNEX	REG_AREA	SPECIES	REG_GEAR	X2003.Rel	X2004.Rel	X2005.Rel	X2006.Rel	X2007.Rel	X2008.Rel	X2009.Rel
IIa	3b	COD	TR1	0.45	0.41	0.43	0.47	0.5	0.58	0.66
IIa	3b	COD	TR2	0.24	0.25	0.21	0.26	0.32	0.17	0.16
IIa	3b	COD	GN1	0.12	0.14	0.12	0.11	0.07	0.06	0.08
IIa	3b	COD	BT2	0.12	0.13	0.09	0.09	0.07	0.08	0.07
IIa	3b	COD	BT1	0.02	0.04	0.04	0.04	0.02	0.01	0.01
IIa	3b	COD	GT1	0.02	0.01	0.01	0.01	0.01	0.01	0.01
IIa	3b	COD	OTTER	0.01	0.01	0.09	0.01	0.01	0.09	0.01
IIa	3b	COD	POTS	0	0	0	0	0	0	0
IIa	3b	COD	PEL_TRAWL	0	0	0	0	0	0	0
IIa	3b	COD	TR3	0	0	0	0	0	0	0
IIa	3b	COD	LL1	0.01	0	0	0	0	0	0
IIa	3b	COD	DREDGE	0	0	0	0	0	0	0
IIa	3b	COD	DEM_SEINE	0	0	0	0	0	NA	0
IIa	3b	COD	BEAM	0	0	0	0	0	0	0
IIa	3b	COD	none	0	0	0	0	0	0	0
IIa	3b	COD	PEL_SEINE	NA	0	0	0	NA	0	NA

ANNEX	REG_AREA	SPECIES	REG_GEAR	X2003.Rel	X2004.Rel	X2005.Rel	X2006.Rel	X2007.Rel	X2008.Rel	X2009.Rel
IIa	3b	PLE	BT2	0.67	0.68	0.68	0.62	0.69	0.65	0.63
IIa	3b	PLE	TR1	0.07	0.08	0.09	0.13	0.13	0.19	0.16
IIa	3b	PLE	GN1	0.04	0.03	0.03	0.03	0.02	0.02	0.09
IIa	3b	PLE	TR2	0.15	0.14	0.13	0.13	0.08	0.09	0.08
IIa	3b	PLE	BT1	0.06	0.05	0.05	0.08	0.06	0.04	0.03
IIa	3b	PLE	GT1	0.01	0.01	0.02	0.01	0.01	0.01	0.01
IIa	3b	PLE	BEAM	0	0	0	0	0	0	0
IIa	3b	PLE	DEM_SEINE	0	NA	0	0	NA	NA	0
IIa	3b	PLE	TR3	0	0	0	0	0	0	0
IIa	3b	PLE	DREDGE	0	0	0	0	0	0	0
IIa	3b	PLE	POTS	0	0	0	0	0	0	0
IIa	3b	PLE	PEL_TRAWL	0	0	0	0	0	0	0
IIa	3b	PLE	OTTER	0	0	0	0	0.01	0	0
IIa	3b	PLE	none	0	0	0	0	0	0	0
IIa	3b	PLE	LL1	0	0	0	0	0	0	0
IIa	3b	PLE	PEL_SEINE	NA	0	0	0	NA	0	NA

ANNEX	REG_AREA	SPECIES	REG_GEAR	X2003.Rel	X2004.Rel	X2005.Rel	X2006.Rel	X2007.Rel	X2008.Rel	X2009.Rel
IIa	3b	SOL	BT2	0.83	0.84	0.82	0.66	0.81	0.79	0.9
IIa	3b	SOL	GN1	0.03	0.03	0.04	0.03	0.03	0.04	0.05
IIa	3b	SOL	TR2	0.04	0.05	0.03	0.2	0.05	0.05	0.04
IIa	3b	SOL	OTTER	0	0	0.01	0	0	0	0
IIa	3b	SOL	TR1	0	0	0	0	0	0	0
IIa	3b	SOL	POTS	0	0	0	0	0	0	0
IIa	3b	SOL	PEL_TRAWL	0	0	0	0	0	0	0
IIa	3b	SOL	GT1	0.08	0.07	0.1	0.09	0.11	0.11	0
IIa	3b	SOL	LL1	0	0	0	0	NA	0	0
IIa	3b	SOL	BEAM	0	0	0	0	0	0	0
IIa	3b	SOL	DREDGE	0	0	0	0	0	0	0
IIa	3b	SOL	BT1	0	0	0	0	0	0	0
IIa	3b	SOL	none	0	0	0	0	0	0	0
IIa	3b	SOL	DEM_SEINE	0	NA	NA	NA	NA	NA	NA
IIa	3b	SOL	TR3	0	0	0	0	0	0	NA

Table 6.3.4.2 Skagerrak, North Sea including 2 EU and Eastern Channel: Ranked categories according to relative cod, plaice and sole landings in weight in area 3b, 2003-2009. Ranking is according to the year 2009.

ANNEX	REG_AREA	SPECIES	REG_GEAR	X2003.Rel	X2004.Rel	X2005.Rel	X2006.Rel	X2007.Rel	X2008.Rel	X2009.Rel
IIa	3b	COD	TR1	0.47	0.46	0.5	0.52	0.54	0.55	0.63
IIa	3b	COD	TR2	0.18	0.17	0.15	0.14	0.16	0.14	0.13
IIa	3b	COD	GN1	0.14	0.18	0.16	0.15	0.12	0.12	0.11
IIa	3b	COD	BT2	0.14	0.11	0.1	0.1	0.11	0.13	0.09
IIa	3b	COD	GT1	0.02	0.01	0.02	0.02	0.02	0.02	0.02
IIa	3b	COD	BT1	0.03	0.05	0.05	0.05	0.04	0.02	0.01
IIa	3b	COD	OTTER	0.01	0.01	0.01	0.01	0.01	0.01	0.01
IIa	3b	COD	POTS	0	0	0	0	0	0	0
IIa	3b	COD	PEL_TRAWL	0	0	0	0	0	0	0
IIa	3b	COD	TR3	0	0	0	0	0	0	0
IIa	3b	COD	LL1	0.01	0.01	0	0.01	0.01	0	0
IIa	3b	COD	DREDGE	0	0	0	0	0	0	0
IIa	3b	COD	DEM_SEINE	0	0	0	0	0	NA	0
IIa	3b	COD	BEAM	0	0	0	0	0	0	0
IIa	3b	COD	PEL_SEINE	NA	0	0	0	NA	0	0
IIa	3b	COD	none	0	0	0	0	0	0	0

ANNEX	REG_AREA	SPECIES	REG_GEAR	X2003.Rel	X2004.Rel	X2005.Rel	X2006.Rel	X2007.Rel	X2008.Rel	X2009.Rel
IIa	3b	PLE	BT2	0.59	0.6	0.62	0.56	0.61	0.56	0.55
IIa	3b	PLE	TR1	0.09	0.11	0.13	0.18	0.17	0.26	0.26
IIa	3b	PLE	TR2	0.13	0.13	0.09	0.08	0.08	0.08	0.09
IIa	3b	PLE	BT1	0.1	0.09	0.08	0.12	0.09	0.05	0.06
IIa	3b	PLE	GN1	0.06	0.04	0.04	0.05	0.03	0.03	0.03
IIa	3b	PLE	GT1	0.01	0.02	0.02	0.02	0.02	0.01	0.02
IIa	3b	PLE	PEL_SEINE	NA	0	0	0	NA	0	0
IIa	3b	PLE	TR3	0	0	0	0	0	0	0
IIa	3b	PLE	POTS	0	0	0	0	0	0	0
IIa	3b	PLE	PEL_TRAWL	0	0	0	0	0	0	0
IIa	3b	PLE	OTTER	0.01	0	0	0	0	0	0
IIa	3b	PLE	none	0	0	0	0	0	0	0
IIa	3b	PLE	LL1	0	0	0	0	0	0	0
IIa	3b	PLE	DEM_SEINE	0	NA	0	0	NA	NA	0
IIa	3b	PLE	BEAM	0	0	0	0	0	0	0
IIa	3b	PLE	DREDGE	0	0	0	0	0	0	0

ANNEX	REG_AREA	SPECIES	REG_GEAR	X2003.Rel	X2004.Rel	X2005.Rel	X2006.Rel	X2007.Rel	X2008.Rel	X2009.Rel
IIa	3b	SOL	BT2	0.82	0.84	0.81	0.78	0.81	0.79	0.78
IIa	3b	SOL	GT1	0.09	0.08	0.11	0.12	0.11	0.12	0.11
IIa	3b	SOL	TR2	0.04	0.03	0.03	0.04	0.04	0.05	0.05
IIa	3b	SOL	GN1	0.04	0.03	0.04	0.04	0.03	0.04	0.05
IIa	3b	SOL	OTTER	0	0	0.01	0	0	0	0
IIa	3b	SOL	TR3	0	0	0	0	0	0	0
IIa	3b	SOL	TR1	0	0	0	0	0	0	0
IIa	3b	SOL	POTS	0	0	0	0	0	0	0
IIa	3b	SOL	PEL_TRAWL	0	0	0	0	0	0	0
IIa	3b	SOL	LL1	0	0	0	0	NA	0	0
IIa	3b	SOL	BEAM	0	0	0	0	0	0	0
IIa	3b	SOL	DREDGE	0	0	0	0	0	0	0
IIa	3b	SOL	BT1	0	0	0	0	0	0	0
IIa	3b	SOL	none	0	0	0	0	0	0	0
IIa	3b	SOL	DEM_SEINE	0	NA	NA	NA	NA	NA	NA

6.3.5. Unregulated gears in management area 3b: Skagerrak, North Sea (incl. 2EU), Eastern Channel

Effort trends by unregulated gears are given in Table 6.3.5.1 and shown in Figure 6.3.5.1. Category 'none none' represents unregulated gear types and mesh sizes in addition to unidentified mesh sizes. This section provides a breakdown of the main gears within this category in effort (kW*Days at sea), cod catches, plaice catches and sole catches.

The unregulated gears account for a very insignificant part of the total landings of cod, plaice and sole, typically less than 1% (Table 6.3.5.2)

Table 6.3.5.1 Skagerrak, North Sea including 2 EU and Eastern Channel: Effort trends for unregulated gears (kW*Days at sea).

REG.GEAR.	COUNTRY	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
BEAM	BEL	390167	463956	335323	392355	317176	329935	324818	350068	356385	362845
BEAM	DEN	678016	921654	821216	939807	833899	772877	704537	944602	990405	1041045
BEAM	ENG	573522	638425	659184	616804	376869	372475	196837	366833	361104	517798
BEAM	FRA	18703	7382	8340	40410	151006	88672	93515	71450	48053	48053
BEAM	GER	6307123	6180615	6214085	6426101	6212126	6201722	6162892	6435155	6211260	6179394
BEAM	NED	5013587	5197903	5309688	5384651	5396410	5243920	5227769	5437768	5215828	5898236
BEAM	SCO	9065	5770	16333	1200	31950	8952	8987	6110	884	0
TOTAL		**12990183**	**13415705**	**13364169**	**13801328**	**13319436**	**13018553**	**12719355**	**13611986**	**13183919**	**14047370**
DEM_SEINE	BEL	0	0	0	0	0	0	0	0	0	17810
DEM_SEINE	DEN	18746	1045	3501	7932	0	0	71	0	0	177
DEM_SEINE	ENG	0	0	102	0	448	358	0	0	0	0
DEM_SEINE	GER	0	0	0	0	0	0	436	0	0	0
DEM_SEINE	NED	0	4944	208	1323	0	0	0	1835	2708	13382
DEM_SEINE	SCO	13955	12707	9470	17167	9270	22780	1710	11182	2138	746
DEM_SEINE	SWE	336	0	112	0	0	0	368	0	368	0
TOTAL		**33037**	**18696**	**13393**	**26422**	**9718**	**23138**	**2585**	**13017**	**5214**	**32115**
DREDGE	BEL	0	0	0	0	0	0	0	1882	14902	89253
DREDGE	DEN	713392	733501	713457	738950	680003	519533	383751	438304	358259	390531
DREDGE	ENG	566756	457332	479025	601042	473965	523965	449353	569827	562317	464399
DREDGE	FRA	8048	72997	952752	342949	426736	2984712	418391	424220	261365	261365
DREDGE	GBJ	0	212	1484	0	0	0	0	0	0	0
DREDGE	GER	282284	93706	110614	387677	328048	160077	94291	183894	43773	67986
DREDGE	IOM	0	1323	0	0	0	11297	32920	44610	37483	59171
DREDGE	IRL	0	0	0	139925	208062	51300	0	0	0	0
DREDGE	NED	20957	17800	24724	300672	167774	127961	244658	244635	286526	461774
DREDGE	NIR	0	0	0	0	0	259	0	0	0	0
DREDGE	SCO	1405892	1256683	1046166	1499738	2174726	1607320	1679565	1893820	1569188	1981832
TOTAL		**2997329**	**2633554**	**3328222**	**4010953**	**4459314**	**5986424**	**3218067**	**3801192**	**3133811**	**3776311**
none	DEN	94406	131819	145068	237970	186725	218454	246960	663031	483403	535362
none	FRA	5145	2058	10744	155575	175963	2468	32944	19603	245644	245644
none	GER	0	0	0	0	0	0	0	0	0	49988
none	SCO	27421	16097	16558	14027	23169	30090	28508	37605	44722	35246
none	SWE	0	0	0	0	0	0	0	0	0	53239
TOTAL		**126972**	**149974**	**172370**	**407572**	**385857**	**251012**	**308412**	**720239**	**773769**	**919479**
OTTER	BEL	988347	860644	650418	549116	0	4935	0	0	0	0
OTTER	DEN	10464627	12254427	10059335	10233501	9613859	5710576	5918359	3883452	5871178	6317444
OTTER	ENG	20280	31753	24195	21751	71009	205188	234755	25843	53290	20314
OTTER	FRA	37022	10894	191640	298339	636070	1007641	460154	231101	191204	192634
OTTER	GER	0	0	0	109150	78875	10782	48072	14680	44061	88148
OTTER	IRL	27000	39080	10500	5344	0	32520	0	0	10070	0
OTTER	NED	276451	136004	85872	134414	17329	8749	221	11187	0	55608
OTTER	NIR	0	0	660	0	0	0	272	6494	1472	0
OTTER	SCO	583743	369022	434262	545510	765990	570700	284732	317093	377965	465452
OTTER	SWE	2667993	3066266	2826512	2832417	3088476	2170140	2208858	1587401	1860216	2356432
TOTAL		**15065463**	**16768090**	**14283394**	**14729542**	**14271608**	**9721231**	**9155423**	**6077251**	**8409456**	**9496032**
PEL_SEINE	DEN	1844974	1597260	1693897	1968479	2129246	2018348	1385757	953355	890130	864420
PEL_SEINE	FRA	0	0	0	0	0	0	0	0	7764	7764
PEL_SEINE	NED	0	13584	9960	19679	9200	14055	13523	8992	11587	6368
PEL_SEINE	NIR	59330	220796	123386	181832	196006	129880	159103	126633	0	0
PEL_SEINE	SCO	633774	157074	20765	7922	3620	8532	5556	0	0	0
PEL_SEINE	SWE	503228	400151	391258	360132	383843	549987	434101	328030	243596	526445
TOTAL		**3041306**	**2388865**	**2239266**	**2531044**	**2721915**	**2720802**	**1998040**	**1417010**	**1153077**	**1404997**
PEL_TRAWL	DEN	4479057	4912536	6038517	6099613	6069492	5026676	4933879	4228674	2561730	2992182
PEL_TRAWL	ENG	831547	1318257	1429547	1543601	1575173	1644709	1246190	1567683	1117167	1043173
PEL_TRAWL	FRA	1232691	2085710	7861426	2406428	2916017	3305224	3529669	2930465	2157846	2157568
PEL_TRAWL	GER	1300485	1357271	1361294	1735237	1667926	1742195	1437273	654151	680308	605615
PEL_TRAWL	IRL	235092	285356	475429	540813	580137	422694	207191	448544	361835	366565
PEL_TRAWL	NED	5443630	5522573	5918180	7265643	7287993	6056808	5042706	4965880	2954450	3051481
PEL_TRAWL	NIR	57167	6647	125566	152113	102623	50103	57356	83469	38030	10853
PEL_TRAWL	SCO	3656205	3108165	4182108	4570772	4515236	2596357	2021581	2060211	1272431	1405802
PEL_TRAWL	SWE	607088	695536	1078115	890029	594778	718380	447171	450874	255416	529588
TOTAL		**17842962**	**19292051**	**28465182**	**25204249**	**25309375**	**21563146**	**18923016**	**17389951**	**11399213**	**12162827**
POTS	BEL	0	0	0	0	0	0	0	0	0	731
POTS	DEN	1062	0	0	3225	8168	4644	4760	29362	20435	8219
POTS	ENG	1402417	1483808	1482278	1777397	1622481	1674995	1561894	1716972	1537759	1458846
POTS	FRA	73157	93034	718393	81114	116446	209755	450109	338176	145347	145347
POTS	GBG	39233	36568	27747	38013	38467	33150	63737	16061	59251	44798
POTS	GBJ	108399	113180	49931	67837	82496	76607	67282	39276	10742	2675
POTS	GER	0	0	0	0	0	0	3234	0	0	0
POTS	IRL	0	0	0	0	0	25334	148673	203334	185248	269953
POTS	NED	0	5326	4562	2822	876	9569	624	3616	4030	4822
POTS	NIR	1407	0	0	0	0	0	0	0	0	0
POTS	SCO	957168	937277	974594	948919	967366	885668	856992	846759	999028	1133562
POTS	SWE	162588	199789	234714	241592	291545	322315	365875	416564	539147	511396
TOTAL		**2745311**	**2868982**	**3492219**	**3160919**	**3127845**	**3242037**	**3523180**	**3610120**	**3500987**	**3580349**

Table 6.3.5.2 Skagerrak, North Sea including 2 EU and Eastern Channel: Catches (t) of cod plaice and sole made by unregulated gears.

SPECIES	GEAR	2003.L	2003.D	2004.L	2004.D	2005.L	2005.D	2006.L	2006.D	2007.L	2007.D	2008.L	2008.D	2009.L	2009.D
COD	BEAM	38	0	23	0	20	0	13	0	24	0	32	0	114	0
COD	DEM_SEINE	1	0	0	0	2	1	3	0	1	0	0	0	2	0
COD	DREDGE	0	0	1	0	0	0	1	0	3	0	0	0	0	0
COD	none	29	0	30	0	12	0	23	0	10	0	43	0	63	0
COD	OTTER	350	33	271	50	288	2601	207	32	118	194	142	3807	204	3
COD	PEL_SEINE	0	0	0	0	8	4	1	0	0	0	0	0	0	0
COD	PEL_TRAWL	35	0	7	0	11	0	11	0	6	0	7	0	41	0
COD	POTS	14	0	16	0	17	0	16	0	12	0	7	0	7	0
TOTAL		**467**	**33**	**348**	**50**	**358**	**2606**	**275**	**32**	**174**	**194**	**231**	**3807**	**431**	**3**

SPECIES	GEAR	X2003.L	X2003.D	X2004.L	X2004.D	X2005.L	X2005.D	X2006.L	X2006.D	X2007.L	X2007.D	X2008.L	X2008.D	X2009.L	X2009.D
PLE	BEAM	234	0	75	0	75	0	46	0	40	0	41	0	26	0
PLE	DEM_SEINE	4	0	0	0	0	0	6	0	0	0	0	0	3	0
PLE	DREDGE	6	0	4	0	33	0	7	0	3	0	7	0	7	0
PLE	none	70	0	59	0	23	0	23	0	63	0	17	0	21	0
PLE	OTTER	363	0	81	0	119	45	42	0	27	483	14	0	13	5
PLE	PEL_SEINE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PLE	PEL_TRAWL	76	0	17	0	14	0	13	0	2	0	13	0	14	0
PLE	POTS	0	0	1	0	0	0	1	0	1	0	0	0	0	0
TOTAL		**753**	**0**	**237**	**0**	**264**	**45**	**138**	**0**	**136**	**483**	**62**	**0**	**84**	**5**

SPECIES	GEAR	X2003.L	X2003.D	X2004.L	X2004.D	X2005.L	X2005.D	X2006.L	X2006.D	X2007.L	X2007.D	X2008.L	X2008.D	X2009.L	X2009.D
SOL	BEAM	73	0	38	58	42	0	18	0	28	0	17	0	26	0
SOL	DEM_SEINE	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SOL	DREDGE	3	0	2	0	42	0	5	0	4	0	4	0	7	0
SOL	none	50	0	58	0	1	0	3	0	2	0	11	0	11	0
SOL	OTTER	97	0	77	0	115	0	47	0	19	0	20	0	20	0
SOL	PEL_TRAWL	25	0	16	0	15	0	14	0	5	0	17	0	17	0
SOL	POTS	0	0	0	0	0	0	0	0	2	0	0	0	0	0
TOTAL		**248**	**0**	**191**	**58**	**215**	**0**	**87**	**0**	**60**	**0**	**69**	**0**	**81**	**0**

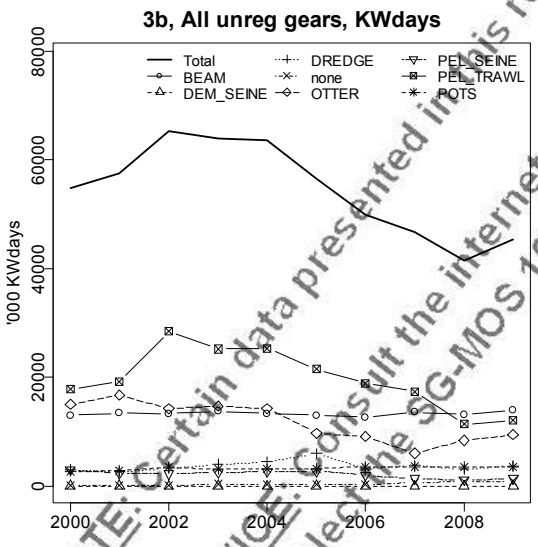


Figure 6.3.5.1. Area 3b (Skagerrak, North Sea including 2 EU and Eastern Channel), effort by unregulated gears.

6.3.6. Vessels <10m in management area 2b: Skaggerak, North Sea and Eastern Channel

Table 6.3.6.1 provides landings data for the vessels under 10m in area 2b, including data from Denmark, England, France, Scotland and Sweden, for the main species caught. Landings for cod, Nephrops and plaice range to up to 2000 tonnes per year, and up to 1000 tonnes for sole, but are less important for the other species.

For the whole area 2b, this represents around 7-8% of the total landings of cod, 4-6% of the total landings of sole, and 2% for the total landings of plaice. The landings of sole and plaice from under 10m beam trawlers show a step up in 2009 compared to earlier years. This results from an absence of Dutch data from earlier years rather than a real change in landings.

Table 6.3.6.1 Skagerrak, North Sea including 2 EU and Eastern Channel: Landings under 10m vessels.

SPECIES	GEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ANF	BEAM	0	0.006	0	0	0	0.126	0.112	0.498	0.219	0.004
	DREDGE	0	0	0	0.009	0.217	0.026	0.008	0.235	0.042	0.271
	GILL	0	0	0	0.67	1.423	5.648	1.969	0.745	2.649	2.537
	LONGLINE	0	0	0	0.002	0.018	0.181	0.322	0.053	0.044	0.177
	NONE	0	0	0	5.856	12.61	6.113	4.48	3.979	8.582	5.433
	OTTER	0	0	0.019	2.401	4.981	3.928	13.697	17.092	11.858	10.262
	POTS	0	0	0	0.001	0.006	0	0.031	0.013	0.085	3.838
	TRAMMEL	0.025	0	0	0.328	0.211	0.073	0.108	0.019	0.018	0.055
TOTAL		**0.025**	**0.006**	**0.019**	**9.268**	**19.466**	**16.094**	**20.727**	**22.634**	**23.495**	**22.578**
COD	BEAM	0.197	1.353	0	0.104	0.618	0.009	0.039	0.368	0.131	36.233
	DEM_SEINE	0	0	0	0	0.166	0	0	0.018	0	0
	DREDGE	0	0	0	1.052	0.018	0.011	0.029	0.593	0.223	1.635
	GILL	104.359	41.836	29.987	411.486	375.654	639.741	882.61	579.756	658.662	568.784
	LONGLINE	0.302	0	0.414	307.003	179.58	108.193	120.605	172.19	261.64	229.003
	NONE	0	0	0	867.428	1198.915	951.47	600.213	410.696	398.308	370.151
	OTTER	4.769	0.931	3.516	37.531	42.749	80.711	151.459	163.905	152.695	188.691
	PEL_SEINE	0	0	0	0	0	0	0	0	0	0
	PEL_TRAWL	0	0	0.14	0.044	0	0.503	0.79	0.005	0.002	0.285
	POTS	0.213	0.01	0.623	17.554	16.243	11.418	11.311	8.032	17.801	51.984
	TRAMMEL	41.29	30.541	31.135	96.508	52.527	66.475	67.123	61.819	66.735	128.324
TOTAL		**151.13**	**74.671**	**65.815**	**1738.709**	**1866.469**	**1858.531**	**1834.179**	**1397.383**	**1556.197**	**1575.089**
HAD	BEAM	0	0	0	0	1.41	0	0	0	0.036	0
	DREDGE	0	0	0	0	3.544	0	0	0	0.023	0.821
	GILL	0	0	0	28.329	6.047	2.687	3.198	0.435	1.451	0.523
	LONGLINE	0	0	0	1.195	0.433	0.362	0.519	0.554	0.104	0.266
	NONE	0	0	0	60.606	10.126	1.293	1.036	0.514	0.889	1.235
	OTTER	0	0	0	30.066	70.437	24.159	49.826	240.983	150.1	66.738
	POTS	0	0	0	0	0.113	0.001	0.168	0.008	0.074	7.509
	TRAMMEL	0	0	0	0.001	0.001	0.023	0.014	0.01	0.224	0.016
TOTAL		**0**	**0**	**0**	**120.196**	**92.112**	**28.525**	**54.761**	**242.303**	**152.902**	**77.108**
NEP	BEAM	0	0	0	0	0	0	0	0	0.027	0
	DREDGE	0	0	0	0.429	0.282	0.095	0.026	0.523	0.097	19.139
	GILL	0	0	0	0	0.001	0.002	0.216	0.134	1.706	0.835
	LONGLINE	0	0	0	0	1.153	0.275	0.059	0.182	0.116	26.244
	NONE	0	0	0	0.271	1.778	0.881	0.367	0.43	0.283	6.781
	OTTER	0	0	0	679.571	936.751	1380.811	2007.148	1792.827	1258.943	893.222
	PEL_TRAWL	0	0	0	0	0	0.116	0	0	0	0
	POTS	0	0	0	101.669	135.47	142.341	140.575	153.499	190.051	974.248
	TRAMMEL	0	0	0	0	0	0	0	0	0	0.213
TOTAL		**0**	**0**	**0**	**781.941**	**1075.436**	**1524.521**	**2148.391**	**1947.594**	**1451.223**	**1920.682**
PLE	BEAM	120.507	54.166	49.782	59.521	59.771	66.014	38.538	41.127	35.723	373.055
	DEM_SEINE	0	0	0	0	0	0	0	0	0.047	0
	DREDGE	0.676	0.034	1.086	0.451	4.561	15.455	22.059	14.472	15.85	14.475
	GILL	58.365	37.574	21.283	317.542	242.462	298.515	396.25	326.757	367.407	363.735
	LONGLINE	0	0	0.061	0.613	1.455	2.626	1.502	1.337	0.51	0.674
	NONE	0	0	0	708.884	638.141	601.957	582.141	396.219	499.215	394.441
	OTTER	60.41	68.442	47.816	247.007	279.589	208.273	454.095	343.724	345.177	330.314
	PEL_TRAWL	0	0	0.04	0.738	0	0.7	0.065	0.524	1.17	1.191
	POTS	0.17	0.186	0.331	2.697	0.304	0.227	0.642	2.011	4.394	8.528
	TRAMMEL	136.387	94.663	119.197	153.284	116.828	123.415	136.131	114.932	65.399	66.052
TOTAL		**376.515**	**255.065**	**239.596**	**1490.736**	**1343.111**	**1317.182**	**1631.422**	**1241.103**	**1334.892**	**1552.463**
POK	DREDGE	0	0	0	0	0	0	0	0	0	1.633
	GILL	0	0	0	6.497	7.491	11.72	28.41	10.391	7.992	6.173
	LONGLINE	0	0	0	20.315	14.527	2.925	5.835	6.334	15.506	0.523
	NONE	0	0	0	31.053	26.099	12.089	20.489	2.655	2.194	8.447
	OTTER	0	0	0	0.214	0.079	0.241	2.703	1.778	0.692	0.639
	POTS	0	0	0	1.196	3.763	6.677	7.255	3.579	3.115	11.337
	TRAMMEL	0.011	0	0	0.384	0.31	0.645	0.979	0.719	0.038	0
TOTAL		**0.011**	**0**	**0**	**59.659**	**52.269**	**34.297**	**65.67**	**25.456**	**29.537**	**28.754**
SOL	BEAM	53.097	57.89	44.596	55.642	55.963	46.59	21.83	44.25	42.382	326.19
	DREDGE	0.161	0.013	1.273	0.52	0.139	8.633	16.784	13.385	11.856	10.263
	GILL	23.658	16.526	18.985	298.748	328.213	246.79	398.234	571.395	445.172	597.093
	LONGLINE	0	0.006	1.378	2.435	2.005	2.183	1.229	0.463	3.052	2.85
	NONE	0	0	0	69.592	72.924	56.372	34.42	38.189	49.877	51.258
	OTTER	34.837	70.392	46.448	205.249	236.589	168.714	281.135	330.39	336.15	368.153
	PEL_SEINE	0	0	0	0	0	0	0	0	0	0
	PEL_TRAWL	0	0	0	0.18	0	0.205	0.001	0.091	0.008	0.008
	POTS	0.056	0.201	0.353	12.184	0.377	1.227	0.452	2.242	14.089	6.088
	TRAMMEL	131.533	169.136	172.841	347.199	291.238	268.188	195.102	118.916	144.295	155.82
TOTAL		**243.342**	**314.164**	**285.874**	**991.749**	**987.448**	**798.902**	**949.185**	**1119.321**	**1046.881**	**1517.724**
WHG	BEAM	0.552	0.986	0	0.18	0.697	0.079	0.306	0.365	0.499	0.432
	DREDGE	0	0	0	0	0.101	0.027	0	0.306	0.083	1.63
	GILL	11.301	5.398	9.388	40.162	50.061	36.494	37.107	10.129	14.12	30.273
	LONGLINE	0	0	0.004	1.72	3.482	2.256	1.436	3.304	3.593	3.845
	NONE	0	0	0	0.18	0.15	0.1	0.031	0.021	0.031	0.06
	OTTER	9.372	7.103	5.993	51.259	119.183	239.265	650.686	655.326	269.946	401.326
	PEL_TRAWL	0	0	0.1	1.809	1.68	0.263	0.003	0.125	0.628	0.628
	POTS	0	0	0.197	0	0.175	1.164	1.966	0.465	1.782	33.173
	TRAMMEL	2.053	2.629	1.656	8.5	6.206	8.327	4.234	1.553	2.631	6.08
TOTAL		**26.278**	**15.516**	**17.338**	**103.81**	**181.734**	**287.976**	**695.768**	**671.595**	**293.313**	**477.446**

6.3.7. Spatial Distribution of Effective Effort in management area 2b: Skagerrak, North Sea including 2 EU, and Eastern Channel

Figures 6.3.7.1-6.3.7.8 show spatial distribution of effort for the eight cod plan gear categories. Otter trawls with 100+mm mesh (TR1, Figure 6.3.7.1) are the main roundfish gear and are mainly used in most of the North Sea. There has been a decrease of the effort in the Southern North Sea over years.

Otter trawls with 70-99 mm mesh size (TR2, Figure 6.3.7.2) are the main Nephrops gears. They are now mostly used on the places of the largest Nephrops Functional Units along the Scottish and English coast as well as in the Skagerrak and the English Channel, while the effort in the Central North Sea and along the Norwegian waters has decreased. This category was previously dealt in two groups, below 90 mm mostly spread on the Western and South-western North Sea, and above 90mm mainly used in Skagerrak. But the grouping of these two distinct groups in a single category does not allow one to observe clear spatial trends.

Static gears have traditionally been localised closer to the shores, often in patchy fishing grounds. There are some indications that fishing grounds for these gears have contracted in recent years.

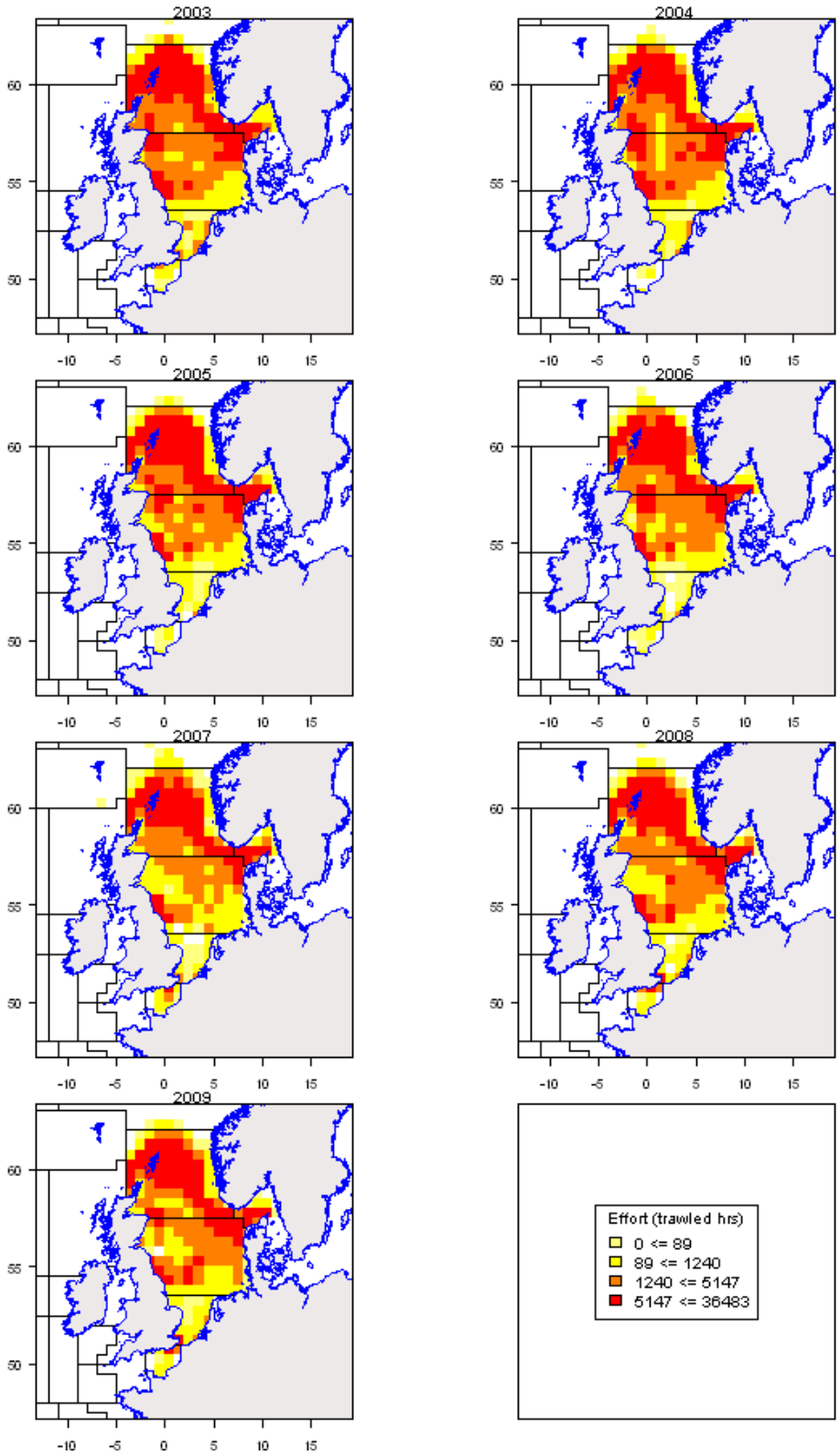


Table 6.3.7.1 Skagerrak, North Sea including 2 EU and Eastern Channel: Effective effort distribution of TR1 gears 2003-2009.

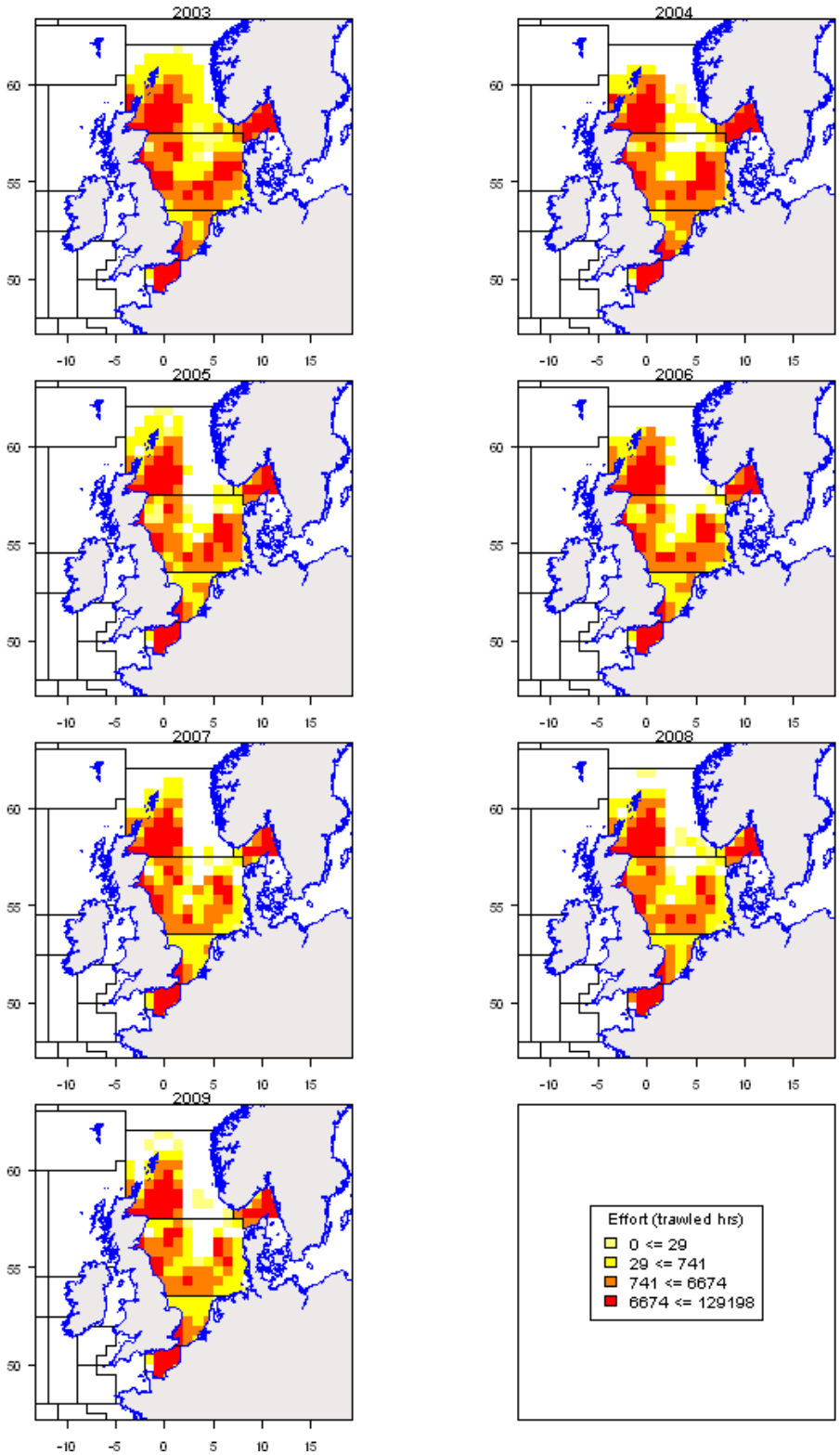


Table 6.3.7.2 Skagerrak, North Sea including 2 EU and Eastern Channel: Effective effort distribution of TR2 gears 2003-2009.

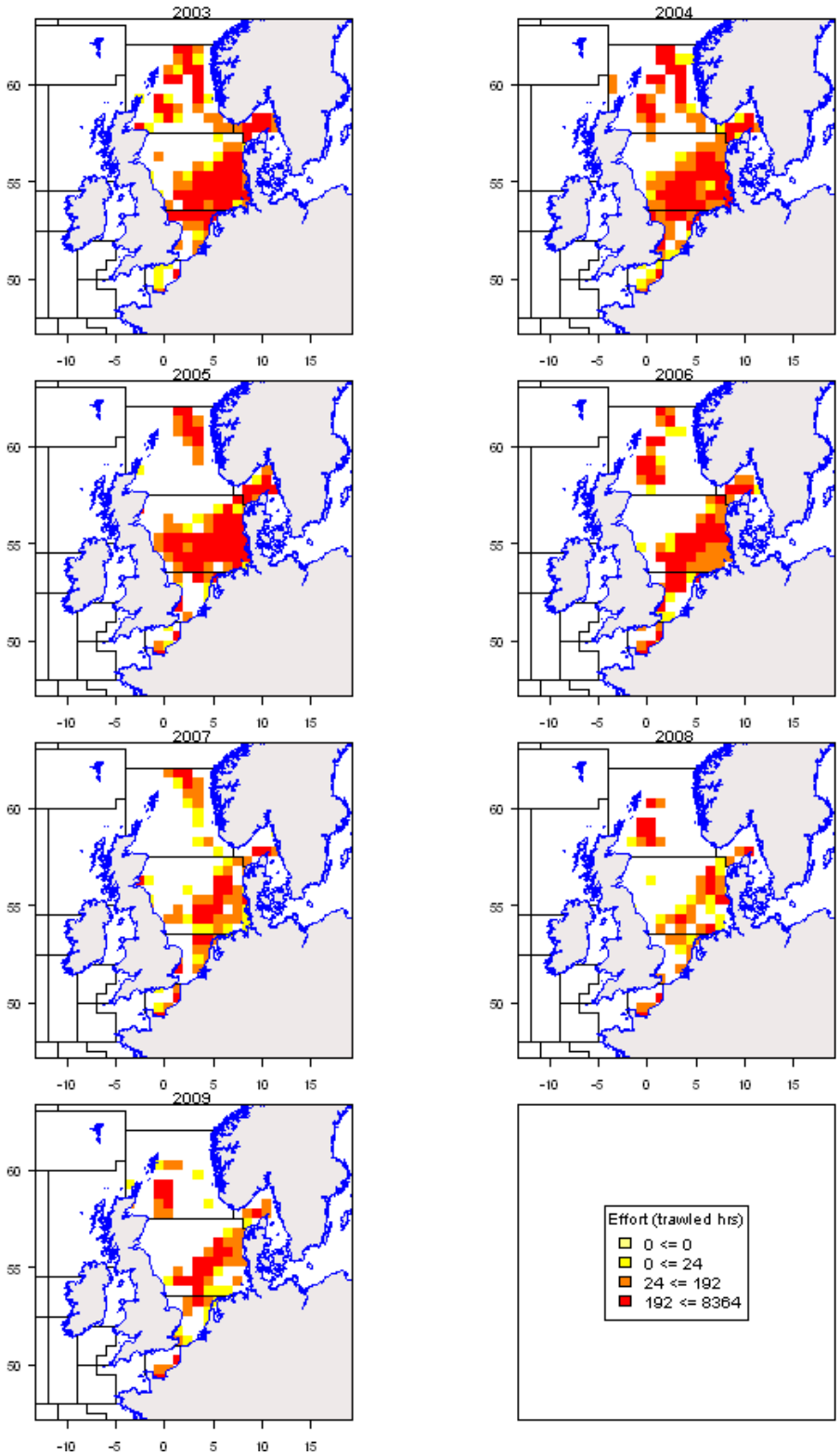


Table 6.3.7.3 Skagerrak, North Sea including 2 EU and Eastern Channel: Effective effort distribution of TR3 gears 2003-2009.

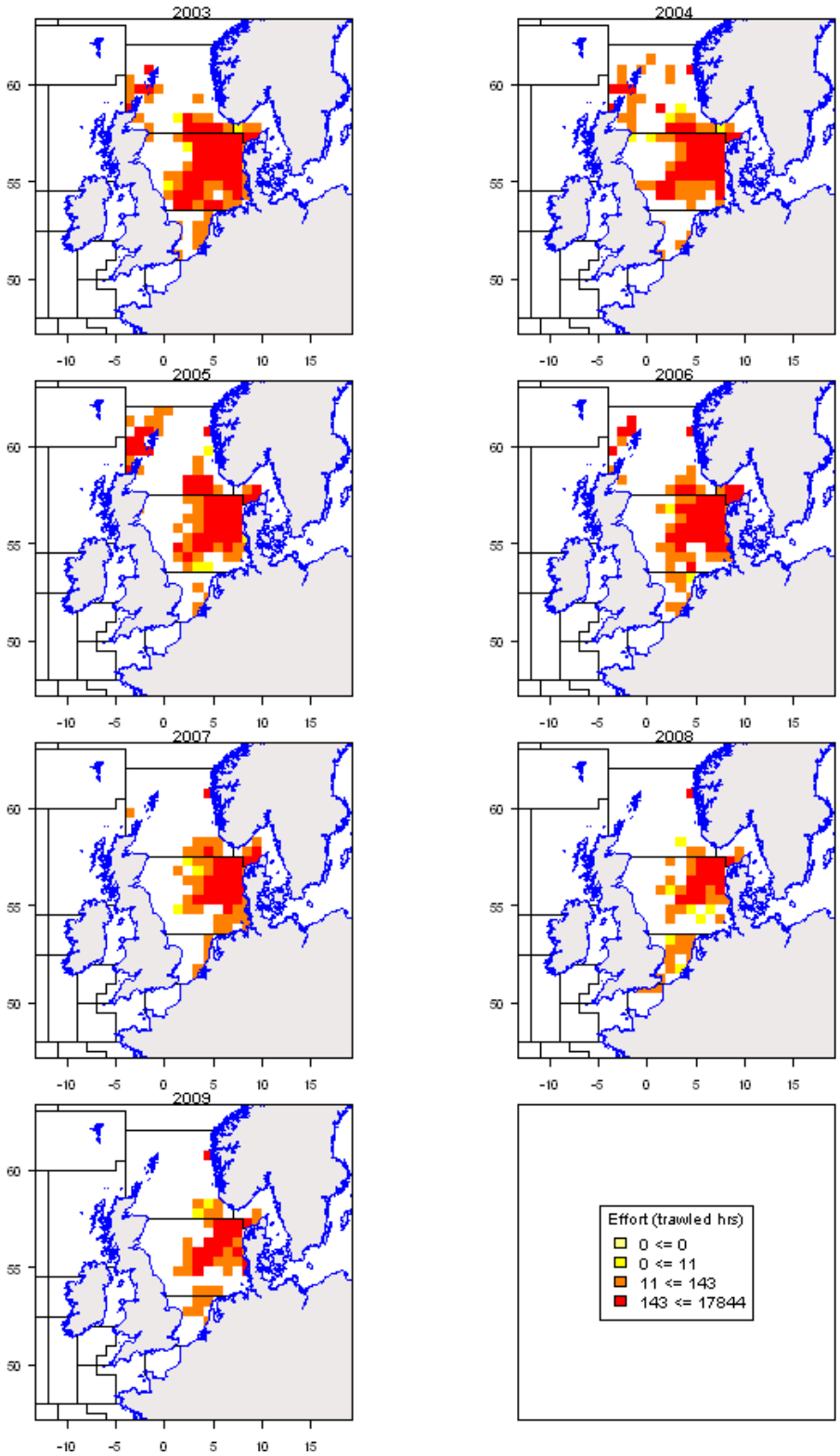


Table 6.3.7.4 Skagerrak, North Sea including 2 EU and Eastern Channel: Effective effort distribution of BT1 gears 2003-2009.

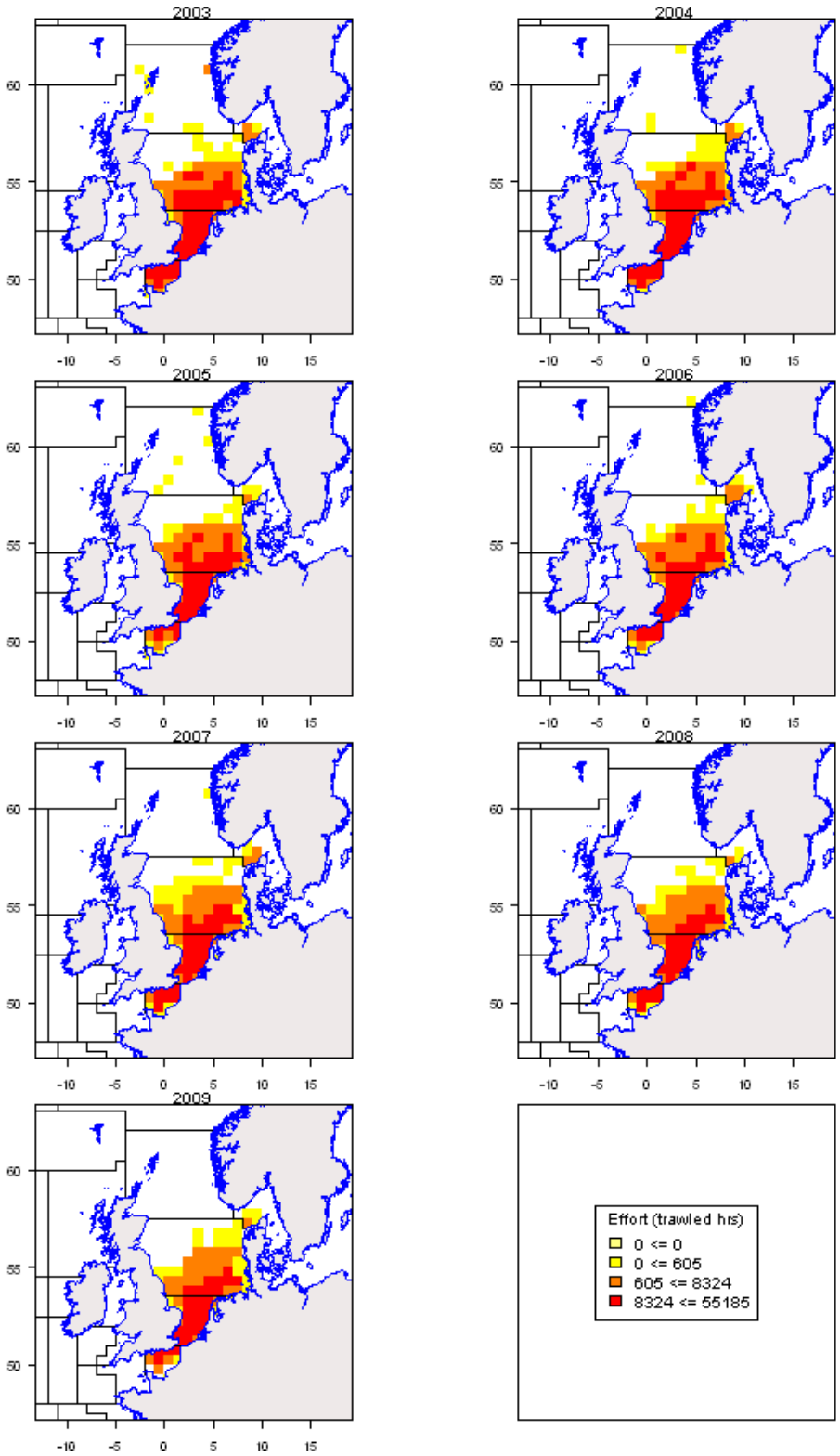


Table 6.3.7.5 Skagerrak, North Sea including 2 EU and Eastern Channel: Effective effort distribution of BT2 gears 2003-2009.

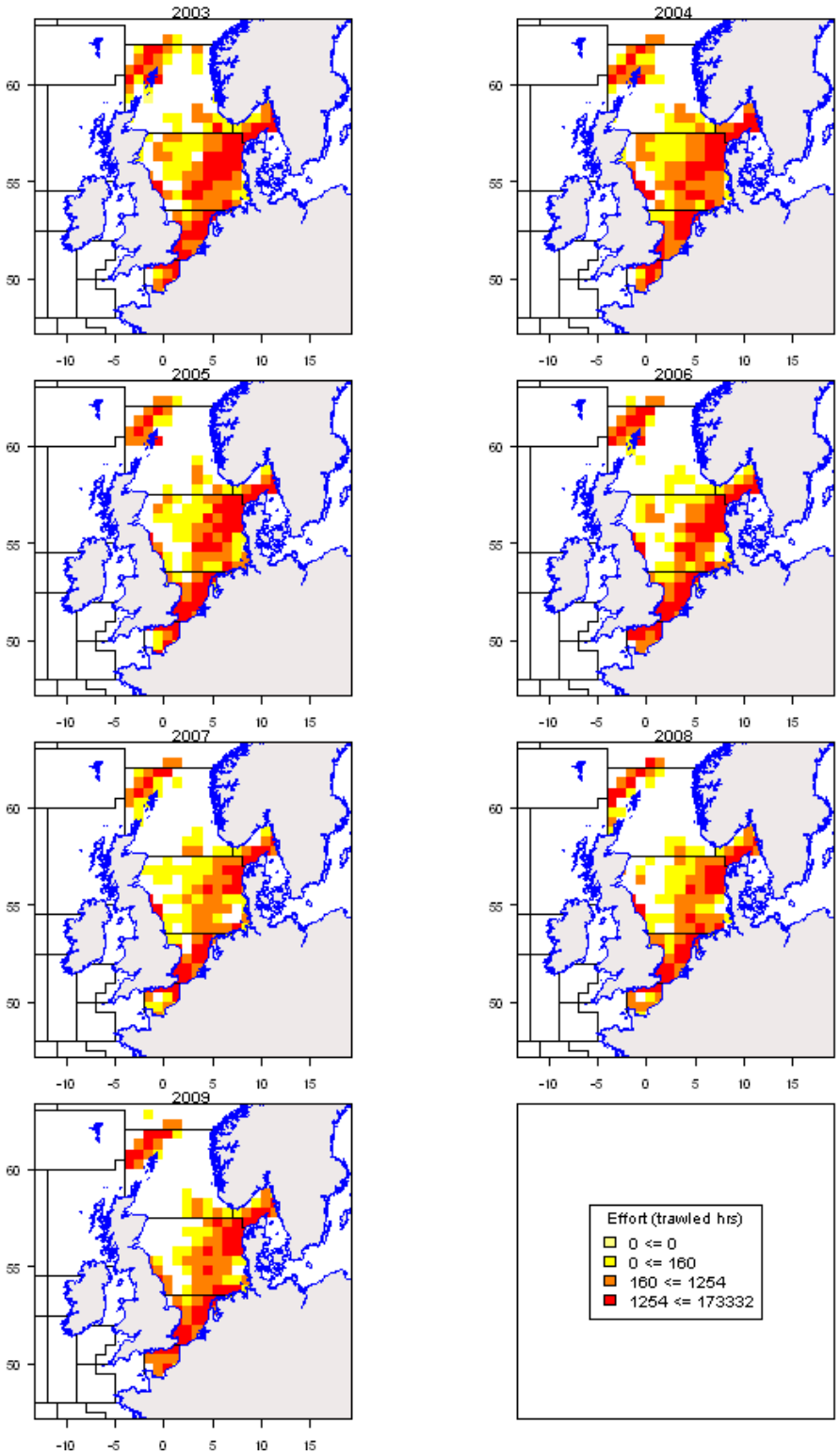


Table 6.3.7.6 Skagerrak, North Sea including 2 EU and Eastern Channel: Effective effort distribution of GN1 gears 2003-2009.

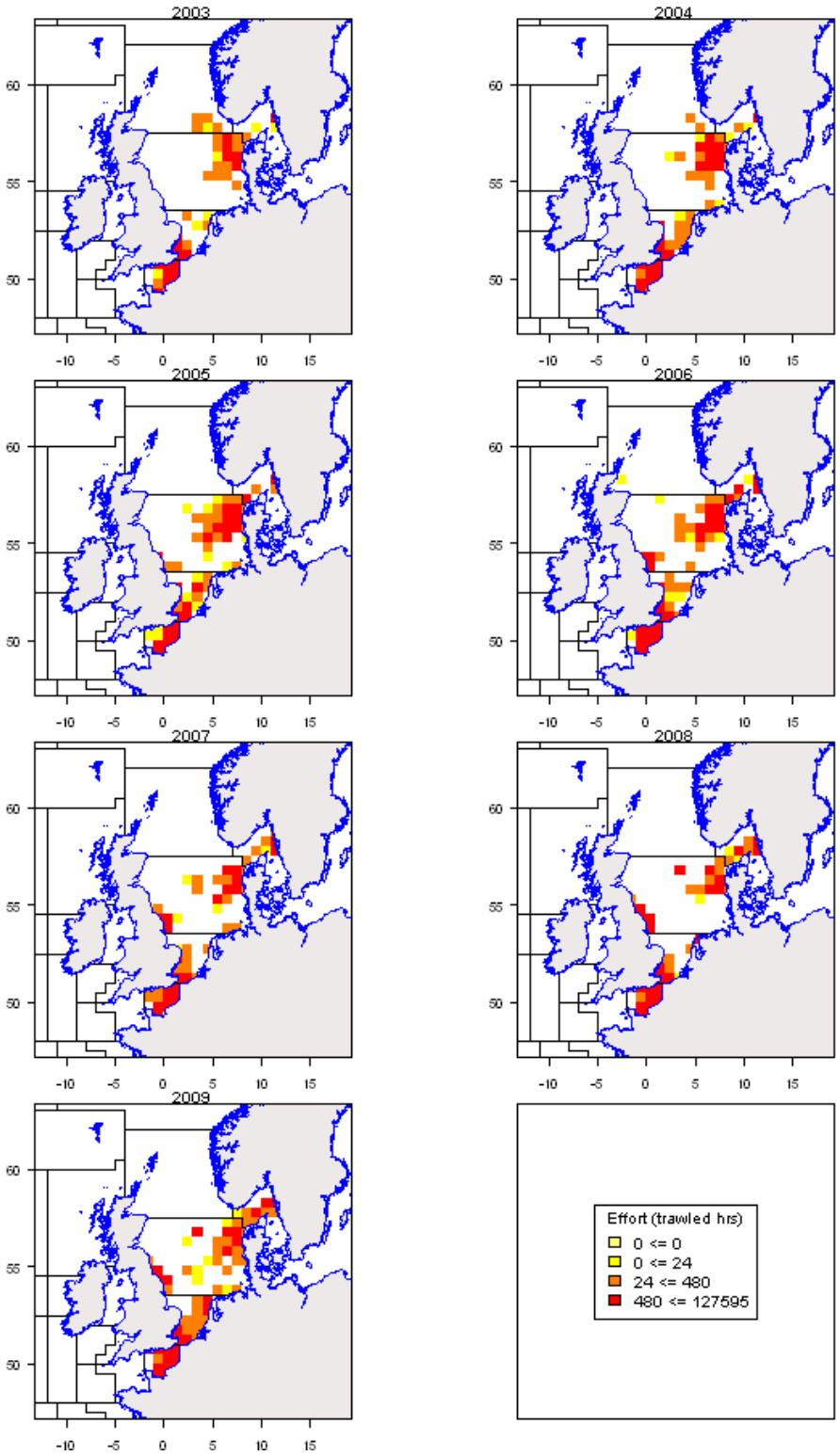


Table 6.3.7.7 Skagerrak, North Sea including 2 EU and Eastern Channel: Effective effort distribution of GT1 gears 2003-2009.

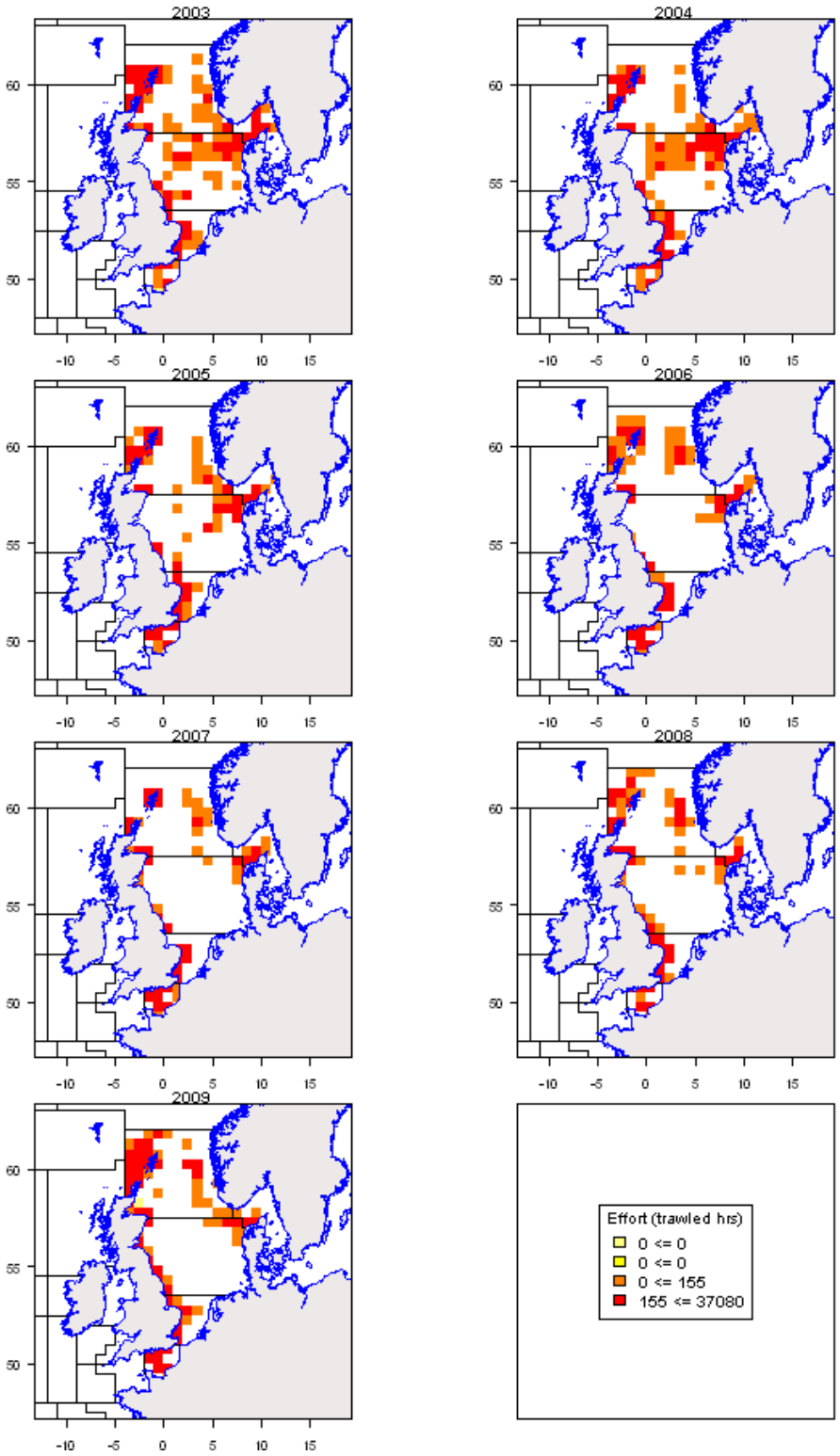


Table 6.3.7.8 Skagerrak, North Sea including 2 EU and Eastern Channel: Effective effort distribution of LL1 gears 2003-2009.

6.4. Management area 3c: Irish Sea

6.4.1. Trends in nominal effort

Effort within the Irish Sea has been compiled for kW*days-at-sea, GT*days-at-sea, and numbers of vessels. The effort deployed in Gross tonnage days (GTdays) and number of vessels are not described in this report but can be found on the STECF SGMOS 10-05 website under the Final Report section: https://stecf.jrc.ec.europa.eu/meetings/2010?p_p_id=62_INSTANCE_Hk1G&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&p_p_col_id=column-2&p_p_col_count=1&_62_INSTANCE_Hk1G_struts_action=%2Fjournal_articles%2Fview&_62_INSTANCE_Hk1G_groupId=43805&_62_INSTANCE_Hk1G_articleId=44677&_62_INSTANCE_Hk1G_version=1.0

Tables 6.4.1.1 details nominal effort by nation, in kW*days-at-sea, according to Annex I of Coun. Reg. 1342/2008 (new cod plan). In comparison with 2009 data submissions, the majority of nations show good consistency. However, France shows large changes to previous years across all effort groups and years (Tables 6.4.1.2).

Nominal effort (kW*days-at-sea) within the Irish Sea has decreased by 36% since 2000 (Table 6.4.1.3). The overall trend indicates historical effort was relatively stable until 2003, after which effort declined. Overall effort within the Irish Sea has declined by ~40% since 2003. An 11% decline occurred between 2008 and 2009.

Unidentified or unregulated effort (gear group 'none') is highest prior to 2003, accounting for approximately 35% of effort. A large proportion of this group was due to Irish effort reported without mesh size information. This is reflected by a decrease in unassigned effort, coupled with increases in both trawl and beam trawl effort from 2003. The remainder of the none category comprises of unregulated gear types and mesh sizes. The proportion of effort within the none category has increased in the last couple of years.. Section 6.4.5 provides a breakdown of this group by gear type. Due to the lack of Irish mesh size information prior to 2003, discussions are primarily focused on data from 2003 onwards.

Over the time series available, Irish Sea fisheries have been dominated by demersal trawling and seining (TR category). This category accounts for around 60% of overall effort, mirroring the overall declining effort trend (Figure 6.4.1.1). Beam trawling has declined over time, now accounting for <10% in the last two years. All other regulated gears account for <1% combined.

TR2, encompassing mesh sizes 70mm to 99mm dominates the TR category (Table 6.4.1.3 and Figure 6.4.1.2). Effort within this group has remained relatively stable over time. In 2009 the majority of this effort occurred under Article 13 of Coun. Reg. 1342/2008 (80% of TR2 effort). Comparatively little effort occurs within TR1 (mesh sizes 100mm and above) in this area, showing a continuous declining trend since 2002. In 2009, over 80% of TR1 effort was assigned to Article 13. No TR gear effort was excluded from the effort management plan through Article 11 of Coun. Reg. 1342/2008 during 2009.

Irish Sea Beam trawl effort occurs within BT2 effort group. A continual, stepwise declining trend is observed for this group (Table 6.4.1.3). Note, Belgium beam trawl effort within the Irish Sea contains assumed mesh sizes, as described in Section 5.5.2. Gillnetting in the Irish Sea occurs at very low levels, halving from 2008 (Figure 6.4.1.1).

Table 6.4.1.1. Irish Sea trends in nominal effort (kW*days at sea) by gear groups of Annex I, Coun. Reg. 1342/2008 and Member State, 2000-2009. Sorted by gear, derogation (SPECON), and country. Data qualities are summarised in Section 5.2.2 and Table 5.2.2.1.

ANNEX	REG AREA COD	REG GEAR COD	SPECON	COUNTRY	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
IIa	3c	BT2	none	BEL	1273518	1791577	2078795	1884843	1428353	1630797	1109075	911537	531575	624989
IIa	3c	BT2	none	ENG	118613	193846	110672	172354	68579	161500	59199	31112	17349	5808
IIa	3c	BT2	none	GBJ	18484	22377	27803	40878	42260	3542				
IIa	3c	BT2	none	IRL				783381	411352	511815	481404	550583	374494	173927
IIa	3c	BT2	none	NED	206768		1750			5884				
IIa	3c	BT2	none	SCO								1074	1378	
IIa	3c	GN1	none	ENG	22741	12716	12438	14872	12326	10011	8378	3930	4297	684
IIa	3c	GN1	none	FRA						838				
IIa	3c	GN1	none	IRL	11031	27746	57472	76613	60549	26672	29531	45081	40957	22212
IIa	3c	GN1	none	NED		660					161			
IIa	3c	GN1	none	NIR	1332	2442	4329		222					2140
IIa	3c	GN1	none	SCO						895				
IIa	3c	GT1	none	ENG	523						475	656	1066	2788
IIa	3c	GT1	none	IRL									1327	1237
IIa	3c	LL1	none	ENG	180243	171126	86688	44138	58414	93773	59656	12238	840	924
IIa	3c	LL1	none	FRA			1200							
IIa	3c	LL1	none	IRL		955			800				149	
IIa	3c	LL1	none	SCO		13284		3247						
IIa	3c	TR1	none	ENG	255172	363705	299745	399886	197351	94201	68905	16846	5932	0
IIa	3c	TR1	CPart13	ENG										21860
IIa	3c	TR1	none	FRA	116211	296262	1411907	264447	167253	176399	109174	67487	19701	19701
IIa	3c	TR1	none	IOM	21107	511	1204	9070	362	172	649	895		
IIa	3c	TR1	none	IRL				358720	134384	87263	84550	140393	73005	60348
IIa	3c	TR1	none	NED									442	
IIa	3c	TR1	none	NIR	1342936	1613525	1846273	2053909	1161889	872476	785380	340235	510151	0
IIa	3c	TR1	CPart13	NIR										384860
IIa	3c	TR1	none	SCO	111174	119211	84432	92516	32104	3889	3104			
IIa	3c	TR2	none	BEL					13210	41730	31762	76592	66847	29980
IIa	3c	TR2	none	ENG	474125	336156	260431	211774	347848	287791	247447	244461	219456	0
IIa	3c	TR2	CPart13	ENG										171656
IIa	3c	TR2	none	FRA	25705	9827	4712	588		2352		810		
IIa	3c	TR2	none	GBJ	530									
IIa	3c	TR2	none	IOM	18286	24145	17282	18628	10826	27205	5427	29763	14592	0
IIa	3c	TR2	CPart13	IOM										23022
IIa	3c	TR2	none	IRL				1194560	1345093	1464635	1458919	1582398	1311139	817332
IIa	3c	TR2	CPart13	IRL										35827
IIa	3c	TR2	none	NIR	3855689	3869187	2915651	3366613	3110597	3185141	2951782	3125387	3345023	0
IIa	3c	TR2	CPart13	NIR										3097345
IIa	3c	TR2	none	SCO	64109	34258	18499	44655	93771	34416	7435	16808	21995	0
IIa	3c	TR2	CPart13	SCO										30815
IIa	3c	TR3	none	DEN				992						
IIa	3c	TR3	none	ENG				134						
IIa	3c	TR3	none	IRL				900	90	3305	960		436	
Total of regulated gears					8118297	8903516	9241283	11037718	8697633	8726702	7502724	7197990	6563046	5527455
IIa	3c	none	none	BEL		6808		528					51749	
IIa	3c	none	none	ENG	350180	417861	584819	648435	546205	596426	690431	590740	508704	443313
IIa	3c	none	none	FRA				1694				906	2844	2844
IIa	3c	none	none	GBG									397	11116
IIa	3c	none	none	GBJ	113032	33456	72836	74180	76378	17726	11996	35952	53928	78825
IIa	3c	none	none	IOM	11127	7319	7564	10154	6782	5194	10315	13983	47908	32458
IIa	3c	none	none	IRL	3272681	2864252	2912408	532033	823155	410194	345725	436158	394646	422541
IIa	3c	none	none	NED	3960	7428	4412		14520	12797	525	4725	54075	17118
IIa	3c	none	none	NIR	296728	332759	237965	303426	256628	249139	274800	300976	352645	325338
IIa	3c	none	none	SCO	703739	1003811	805622	901594	725105	807055	603817	940517	1260522	1371630
Total of unregulated gears					4751447	4673694	4625626	2472044	2448773	2098531	1937609	2323957	2727418	2705183
Grand total					12869744	13577210	13866909	13509762	11146406	10825233	9440333	9521947	9290464	8232638

Table 6.4.1.2. Irish Sea relative differences in nominal effort (kW*days at sea) 2010 submissions by Member State by Annex I, Coun. Reg. 1342/2008. Sorted by gear, and country.

ANNEX	REG AREA	REG GEAR	COUNTRY	2000	2001	2002	2003	2004	2005	2006	2007	2008
IIa	3c	BEAM	ENG	0	0	0	0	0	0	0	0	0
IIa	3c	BEAM	IRL	0	0	0	0	0	0	0	0	0
IIa	3c	BEAM	NIR	0	0	0	0	0	0	0	0	0
IIa	3c	BT2	BEL	0	0	0	0	-0.001	0	0	0	0
IIa	3c	BT2	ENG	0	0	0	0	0	0	0	0	0
IIa	3c	BT2	GBJ	0	0	0	0	0	0	0	0	0
IIa	3c	BT2	IRL	0	0	0	0	0	0	0	0	0.005
IIa	3c	BT2	NED	0	0	0	0	0	0	0	0	0
IIa	3c	BT2	SCO	0	0	0	0	0	0	0	0	0
IIa	3c	DEM_SEINE	ENG	0	0	0	0	0	0	0	0	0
IIa	3c	DEM_SEINE	IRL	0	0	0	0	0	0	0	0	0
IIa	3c	DREDGE	BEL	0	0	0	0	0	0	0	0	0
IIa	3c	DREDGE	ENG	0	0	0	0	0	0	0	0	0.007
IIa	3c	DREDGE	GBJ	0	0	0	0	0	0	0	0	0
IIa	3c	DREDGE	IOM	0	0	0	0	0	0	0	0	0
IIa	3c	DREDGE	IRL	0	0	0	0.008	0	0	0	0	0.065
IIa	3c	DREDGE	NED	0	0	0	0	0	0	0	0	0
IIa	3c	DREDGE	NIR	0	0	0	0	0	0	0	0	0.005
IIa	3c	DREDGE	SCO	0	0	0	0	0	0	0	0	0
IIa	3c	GN1	ENG	0	0	0	0	0	0	0	0	0
IIa	3c	GN1	IRL	0	0	0	0	0	0	0.153	0	0
IIa	3c	GN1	NED	0	0	0	0	0	0	0	0	0
IIa	3c	GN1	NIR	0	0	0	0	0	0	0	0	0
IIa	3c	GN1	SCO	0	0	0	0	0	0	0	0	0
IIa	3c	GT1	ENG	0	0	0	0	0	0	0	0	0
IIa	3c	GT1	IRL	0	0	0	0	0	0	0	0	0
IIa	3c	LL1	ENG	0	0	0	0	0	0	0	0	0
IIa	3c	LL1	IRL	0	0	0	0	0	0	0	0	0
IIa	3c	LL1	SCO	0	0	0	0	0	0	0	0	0
IIa	3c	none	FRA	0	0	0	0	0	0	0	-0.848	0
IIa	3c	none	IRL	0	0	0	0	0	0	0	0	0
IIa	3c	none	SCO	0	0	0	0	0	0	0	0	0
IIa	3c	OTTER	BEL	0	0	0	0	0	0	0	0	0
IIa	3c	OTTER	ENG	0	0	0	0	0	0	0	0	0
IIa	3c	OTTER	IRL	0	0	0	-0.023	0	0	0	0	0
IIa	3c	OTTER	NED	0	0	0	0	0	0	0	0	0
IIa	3c	OTTER	NIR	0	0	0	0	0	0	0	0	0
IIa	3c	OTTER	SCO	0	0	0	0	0	0	0	0	0
IIa	3c	PEL_SEINE	IRL	0	0	0	0	0	0	0	0	0
IIa	3c	PEL_SEINE	NIR	0	0	0	0	0	0	0	0	0
IIa	3c	PEL_TRAWL	ENG	0	0	0	0	0	0	0	0	0
IIa	3c	PEL_TRAWL	IRL	0	0	0	0	0	0	0	0	0
IIa	3c	PEL_TRAWL	NED	0	0	0	0	0	0	0	0	0
IIa	3c	PEL_TRAWL	NIR	0	0	0	0	0	0	0	0	0
IIa	3c	PEL_TRAWL	SCO	0	0	0	0	0	0	0	0	0
IIa	3c	POTS	ENG	0	0	0	0	0	0	0	0	0.006
IIa	3c	POTS	GBG	0	0	0	0	0	0	0	0	0
IIa	3c	POTS	GBJ	0	0	0	0	0	0	0	0	0
IIa	3c	POTS	IOM	0	0	0	0	0	0	0	0	0
IIa	3c	POTS	IRL	0	0	0	0	0	0	0	0.007	0.009
IIa	3c	POTS	NIR	0	0	0	0	0	0	0	0	0
IIa	3c	POTS	SCO	0	0	0	0	0	0	0	0	0
IIa	3c	TR1	ENG	0	0	0	0	0	0	0	0	0
IIa	3c	TR1	FRA	-0.131	-0.396	1.263	-0.372	-0.408	-0.31	-0.231	-0.047	0.294
IIa	3c	TR1	IOM	0	0	0	0	0	0	0	0	0
IIa	3c	TR1	IRL	0	0	0	0	0	0	-0.031	0	-0.004
IIa	3c	TR1	NED	0	0	0	0	0	0	0	0	0
IIa	3c	TR1	NIR	0	0	0	0	0	0	0	0	0
IIa	3c	TR1	SCO	0	0	0	0	0	0	0	0	0
IIa	3c	TR2	BEL	0	0	0	0	0	0	0	0	0
IIa	3c	TR2	ENG	0	0	0	0	0	0	-0.001	0	0
IIa	3c	TR2	FRA	-0.372	0.774	5.003	0.5	0	-0.2	0	0	0
IIa	3c	TR2	GBJ	0	0	0	0	0	0	0	0	0
IIa	3c	TR2	IOM	0	0	0	0	0	0	0	0	0
IIa	3c	TR2	IRL	0	0	0	-0.006	-0.004	-0.003	0.001	0.001	0.004
IIa	3c	TR2	NIR	0	0	0	0	0	0	-0.001	0	0
IIa	3c	TR2	SCO	0	0	0	0	0	0	0	0	0
IIa	3c	TR3	DEN	0	0	0	0	0	0	0	0	0
IIa	3c	TR3	ENG	0	0	0	0	0	0	0	0	0
IIa	3c	TR3	IRL	0	0	0	0	0	0	0	0	0

Table 6.4.1.3 Trend in nominal effort (kW*days at sea) by effort group (Coun. Reg. 1342/2008), 2000-2009.

REG AREA	REG GEAR	SPECON	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Relative change to 2003	Relative change to 2008
3c	BT2	none	1,617,383	2,007,800	2,219,020	2,881,456	1,950,544	2,313,538	1,649,678	1,494,256	924,796	804,724	-0.72	-0.13
3c	BT2 Total		1,617,383	2,007,800	2,219,020	2,881,456	1,950,544	2,313,538	1,649,678	1,494,256	924,796	804,724	-0.72	-0.13
3c	GN1	none	35,104	43,564	74,239	91,485	73,097	38,416	38,070	49,011	45,254	25,036	-0.73	-0.45
3c	GN1 Total		35,104	43,564	74,239	91,485	73,097	38,416	38,070	49,011	45,254	25,036	-0.73	-0.45
3c	GT1	none	523						475	656	2,393	4,025		0.68
3c	GT1 Total		523						475	656	2,393	4,025		0.68
3c	LL1	none	180,243	185,365	87,888	47,385	59,214	93,773	59,656	12,238	989	924	-0.98	-0.07
3c	LL1 Total		180,243	185,365	87,888	47,385	59,214	93,773	59,656	12,238	989	924	-0.98	-0.07
3c	TR1	CPart13										406,720	NA	NA
3c	TR1	none	1,846,600	2,393,214	3,643,561	3,178,548	1,693,343	1,234,400	1,051,113	565,610	610,126	80,049	-0.97	-0.87
3c	TR1 Total		1,846,600	2,393,214	3,643,561	3,178,548	1,693,343	1,234,400	1,051,113	565,610	610,126	486,769	-0.85	-0.20
3c	TR2	CPart13										3,358,665	NA	NA
3c	TR2	none	4,438,444	4,273,573	3,216,575	4,836,818	4,921,345	5,043,270	4,702,772	5,076,219	4,979,052	847,312	-0.82	-0.83
3c	TR2 Total		4,438,444	4,273,573	3,216,575	4,836,818	4,921,345	5,043,270	4,702,772	5,076,219	4,979,052	4,205,977	-0.13	-0.16
3c	TR3	none				2,026	90	3,305	960		436		-1.00	-1.00
3c	TR3 Total					2,026	90	3,305	960		436		-1.00	-1.00
3c	Total regulated gears		8,118,297	8,903,516	9,241,283	11,037,718	8,697,633	8,726,702	7,502,724	7,197,990	6,563,046	5,527,455	-0.50	-0.16
3c	none	none	4,751,447	4,673,694	4,625,626	2,472,044	2,448,773	2,098,531	1,937,609	2,323,957	2,727,418	2,705,183	0.09	-0.01
Grand total			12,869,744	13,577,210	13,866,909	13,509,762	11,146,406	10,825,233	9,440,333	9,521,947	9,290,464	8,232,638	-0.39	-0.11

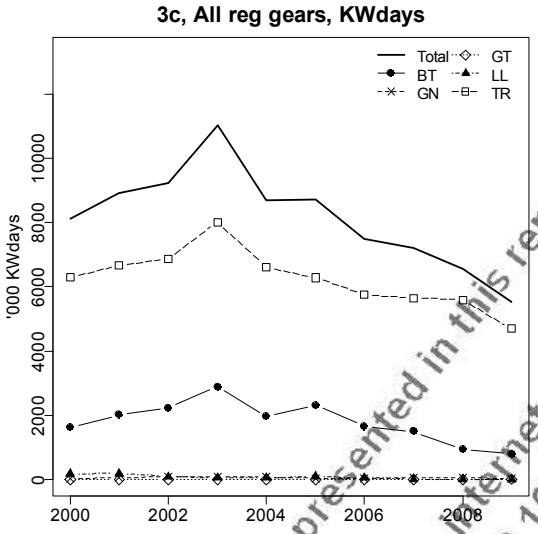


Figure 6.4.1.1. Irish Sea. Trend in regulated gear nominal effort (kW*days-at-sea) by Coun. Reg. 1342/2008, 2000-2009.

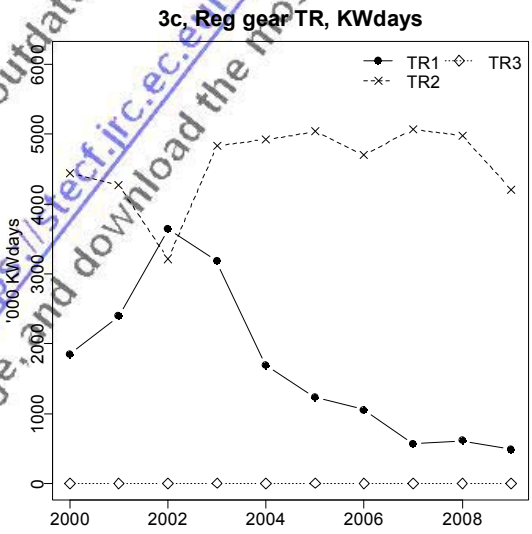


Figure 6.4.1.2. Irish Sea. Trend in regulated gear TR (demersal trawl and Danish seine) nominal effort (kW*days-at-sea) by Coun. Reg. 1342/2008, 2000-2009.

6.4.2. Trend in catch estimates in weight and numbers at age

Table 6.4.2.1 lists the landings and available discards for the main species by gear groups relating to Coun. Reg. 1342/2008. For the reason of space limitation of this report, the following sections represent the landings in weight and numbers for monkfish (ANF), cod (COD), haddock (HAD), hake, (HKE), horse mackerel (JAX), mackerel (MAC), Nephrops (NEP), plaice (PLE), saithe (POK), rays (RAJ), sole (SOL), and whiting (WHG). Additional data queries for other species can be provided depending on data provisions of the national catches by the experts or national institutes. The data given in the table forms the basis of Figure 6.4.2.1 displaying the relative landings compositions by gear groups for the years 2003-2009.

Discard information available within the Irish Sea is incomplete. Discard data is not available for all species and/or years within each gear grouping. In previous years it has been reported that amongst the demersal trawl (TR) groups, TR2 has the most complete data, with complete discard information for cod, haddock, hake, plaice, rays, and whiting. Availability of discard information is more sporadic in TR1. Data availability has increased in most recent years, particularly noticeable in TR1 and BT2 where previously data was sporadic. No gillnet discard information was provided to the group within the Irish Sea.

Unfortunately, detailed presentation and discussion of discard information from the Irish Sea is not included this year owing to spurios figures which render the data unreliable and misleading. Firstly, discard material was inadvertently not requested from Northern Ireland. Northern Ireland is a large player within the Irish Sea TR2 *Nephrops* fishery, and carries out a quite extensive observer program to monitor this fleet. Secondly, some submissions of insignificant quantities of discards (based on fillin rules and not on direct observations from the Irish Sea) were automatically used within the STECF databases to generate a discard rate subsequently applied to the landings of countries for which no discard estimate was available. This resulted in 'phantom' discards which bear no relation to the true situation.

Northern Ireland has previously submitted an extensive dataset to ICES. The text table below provides a comparison of these estimates of discards (pale blue) with the spurious information (yellow). Inclusion of discard estimates will be resumed in 2011 once SGMOS has had an opportunity to consider the material.

ANNEX	SPECIES	REG_ARE	REG_GEA	COUNTRY		2008 L	2008 D	2008 R	2009 L	2009 D	2009 R
IIa	COD	3c	TR2	ENG	UK	5	1	0.17	1	7	0.88
IIa	COD	3c	TR2	IOM	UK	0	0	0			0
IIa	COD	3c	TR2	NIR	UK	185	738	0.8	94	475	0.83
IIa	COD	3c	TR2	SCO	UK	0	0	0	1	3	0.75
						From NI discard sampling info					
							2.8	0.01		10.1	0.10
				No. of observer trips			71			48	

The primary gear categories with landings from the Irish Sea are discussed. As a first note, cod area misreporting is known to be an issue for Ireland within this area, with ICES division VIIg cod catches being reported into the southern Irish Sea. This primarily relates to gillnet and otter trawl gear types. The misreporting in VIIa results from a restrictive VIIe-k quota. This has occurred for a number of years, annually ranging between ~50t and >500t. WGCSE (ICES, 2010) estimated that over 500t of cod in 2007 and 2008 reported into the southern Irish Sea was caught in VIIg, this was believed to have reduced in 2009 to ~50t. Misreporting has not been corrected for within the data provided to the group.

Landings of *Nephrops*, (the primary target species within the Irish Sea) have been elevated since 2007 following a period of relative stability. 2009 landings were reduced in comparison to 2008, although remaining above pre-2007 levels. Cod landings halved in 2009, following two years of elevated landings. After 2003, whiting has been landed in low, relatively stable levels, primarily by the TR groups. A peak was observed in 2007. Haddock, also primarily landed by TR gears, showed stability prior to increased levels in 2007, from which landings are now declining. Plaice and sole show a continual decline over the period, owing to the decline in beam trawling, the primary gear type landing these species. Landing declines are also seen for anglerfish, partially attributable to the decline in beam trawl and TR1 effort over time.

In relation to gear group species composition, TR2 primarily lands *Nephrops* with other components occurring at comparatively low levels, such as cod, haddock, whiting, plaice, and anglerfish (Figure 6.4.2.1). This category has consistently accounted for around a third of cod landings (25%-40%). An increasing proportion of plaice landings result from the TR2 category, due to a decline in beam trawl landings.

The species composition of TR1, the larger mesh size group, is very different to TR2, containing virtually no *Nephrops*. Landings primarily consist of haddock and cod, with lower quantities of hake. Low levels of a variety of other species occur including plaice and whiting (Figure 6.4.2.1). This category accounts for the greatest annual cod landings, typically around 40%, which increased to 56% in 2009. TR1 consistently accounts for over 50% of haddock, and the majority of hake annual landings (65-80%, except 2007 where hake landings were particularly low).

Beam trawls are also operated within the Irish Sea, although their use is declining much of which is due to decommissioning schemes. BT2 (80-119mm) is the only beam trawl category. Belgium (and the Netherlands) beam trawls are assumed to have used the minimum mesh size group 80-89mm (Sec. 5.5.2). No assumptions are made for the remaining nations. The species composition of this category is stable, dominated by sole, plaice, and rays. The proportion of the latter has increased over time, whilst sole and plaice have remained relatively consistent (Figure 6.4.2.1). Low level landings (<10%) of anglerfish and cod are present, along with haddock (<5%). The contribution of this category to cod landings has decreased over time, to less than 5% in the most recent years. This gear accounts for roughly 50% of total plaice landings (although this was less in 2007 and 2008) while the majority of sole landings originate from this category (>80%). Discard data availability for this gear category has improved since 2007 although remains sporadic in earlier years.

The primary target of Irish Sea gillnets is cod, which dominate the low level landings (Figure 6.4.2.1). Although the main target of this gear category is cod, landings are low and in most years account for <15% of total Irish Sea cod landed. In 2007 and 2008 landings doubled, increasing the proportion to ~30%. Minimal levels of other species are landed. No discard data was available for this gear category.

The ToR request landings and discards at age by gear group for cod, plaice and sole. For the reasons explained above, discards at age are not discussed. Numbers at age by the gear groups primarily landing these three species are illustrated in Figures 6.4.2.2-6.4.2.8. Additional species specific data queries could be provided on request depending on data provisions by the experts or national institutes. Information on weights-at-age were not considered to be adequate and are not discussed.

Cod age information shows that within TR1 and TR2, landings are recorded from age 1 to 8, however the majority landed are age 2 and in some years age 2 and 3 (Figure 6.4.2.2). BT2 shows the same exploitation pattern as the TR groups (Figure 6.4.2.3. Little can be inferred regarding the age exploitation pattern for the gillnet group (Figure 6.4.2.4) due to lack of data.

Plaice numbers-at-age within TR2 are shown in Figure 6.4.2.5. Landed plaice are recorded from age 1 to 9 with the greatest numbers occurring between age 3 and 6. The TR1 group indicates a similar pattern in landings. The BT2 group show a similarly dispersed landed age range, with greatest numbers occurring around age 4 (Figure 6.4.2.6). For this gear, age 1 plaice are rarely landed.

Sole numbers-at-age within TR2 are landed across a wide range of ages although the data shows little between years consistency in landed ages (Figure 6.4.2.7). A wide range of ages are again landed by BT2, which shows greater consistency (Figure 6.4.2.8). The majority of landings occur between age 3 and 5, peaking in most years at age 3. Age 1 sole were only landed in a couple of years and in low numbers.

Table 6.4.2.1 Irish Sea. Landings (t) by species and gear according to Coun. Reg. 1342/2008, 2003-2009.

SPECIES	REG_AREA	REG_GEAR	SPECON	2003 L	2004 L	2005 L	2006 L	2007 L	2008 L	2009 L
ANF	3c	BT2	none	235	175	184	123	114	56	43
ANF	3c	GN1	none	5	5	4	4		1	
ANF	3c	none	none	13	36	2	2	13	4	
ANF	3c	TR1	CPart13							2
ANF	3c	TR1	none	123	122	52	36	22	10	6
ANF	3c	TR2	CPart13							91
ANF	3c	TR2	none	256	251	218	242	273	198	62
COD	3c	BT2	none	248	125	156	78	107	31	18
COD	3c	GN1	none	93	115	55	131	329	392	78
COD	3c	GT1	none					1	1	1
COD	3c	LL1	none	1	1	2	3	1	12	
COD	3c	none	none	12	28		1	3		1
COD	3c	TR1	CPart13							289
COD	3c	TR1	none	568	445	374	416	339	467	73
COD	3c	TR2	CPart13							96
COD	3c	TR2	none	416	394	371	309	423	310	88
HAD	3c	BT2	none	37	25	34	28	32	9	8
HAD	3c	GN1	none	12	9	3	7	11	4	17
HAD	3c	none	none	6	35		2	1	4	2
HAD	3c	TR1	CPart13							333
HAD	3c	TR1	none	347	366	303	447	588	471	221
HAD	3c	TR2	CPart13							106
HAD	3c	TR2	none	247	259	189	167	441	383	147
HKE	3c	BT2	none	4	5	7	3	4	1	1
HKE	3c	GN1	none	17	8	5	5	5	1	1
HKE	3c	none	none		4					
HKE	3c	TR1	CPart13							138
HKE	3c	TR1	none	201	231	209	173	80	183	3
HKE	3c	TR2	CPart13							44
HKE	3c	TR2	none	55	85	98	58	67	45	11
JAX	3c	none	none	37	12	60	21	51		5
JAX	3c	TR1	none	3						
JAX	3c	TR2	none							
MAC	3c	GN1	none				1			
MAC	3c	none	none	36	3	173		1		19
MAC	3c	TR1	none		1			1		
MAC	3c	TR2	none		2	1		1	2	
NEP	3c	BT2	none	7	1		2	1		
NEP	3c	GN1	none			9				
NEP	3c	none	none	64	335	1	13	6	49	17
NEP	3c	TR1	CPart13							5
NEP	3c	TR1	none	50	40	20	25	23	24	8
NEP	3c	TR2	CPart13							7235
NEP	3c	TR2	none	7167	7189	6937	7749	9375	10807	2279
PLE	3c	BT2	none	834	555	689	413	262	182	212
PLE	3c	GN1	none			2				
PLE	3c	none	none	15	49	4	1	1	2	
PLE	3c	TR1	CPart13							8
PLE	3c	TR1	none	330	125	76	112	57	42	13
PLE	3c	TR2	CPart13							118
PLE	3c	TR2	none	255	366	409	332	377	258	44
POK	3c	BT2	none			2			1	
POK	3c	GN1	none	28	23	3	4	10	1	1
POK	3c	none	none		4					
POK	3c	TR1	CPart13							13
POK	3c	TR1	none	217	173	63	20	3	9	
POK	3c	TR2	none	43	20	16	3	2		1
RAJ	3c	BT2	none	486	126	372	259	344	293	220
RAJ	3c	GN1	none	3	2	29	1		4	2
RAJ	3c	GT1	none						2	1
RAJ	3c	none	none	90	204	7	6	4	7	2
RAJ	3c	TR1	none	395	160	122	98	73	51	47
RAJ	3c	TR2	none	144	334	348	292	303	154	98
SOL	3c	BT2	none	945	659	801	516	400	275	291
SOL	3c	none	none	9	10	4	2	4	1	
SOL	3c	TR1	none	17	7	6	2	3	1	2
SOL	3c	TR2	CPart13							13
SOL	3c	TR2	none	36	30	36	42	76	37	15
WHG	3c	BT2	none	19	14	12	4	5	2	2
WHG	3c	GN1	none	11	6	1		1	1	
WHG	3c	none	none	8	17			2	6	
WHG	3c	TR1	CPart13							6
WHG	3c	TR1	none	219	72	39	19	91	47	52
WHG	3c	TR2	CPart13							6
WHG	3c	TR2	none	184	80	104	61	97	23	26

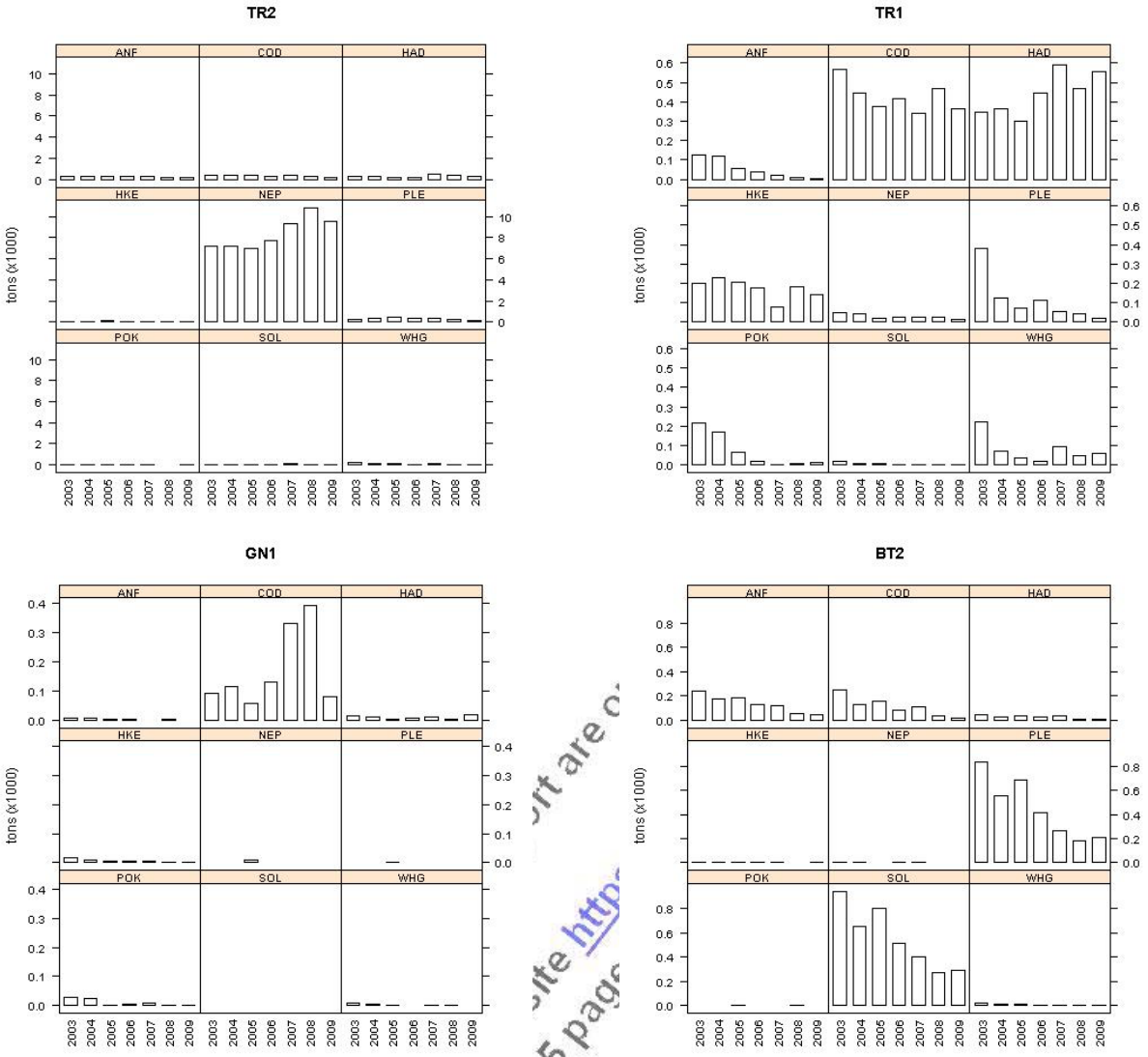


Figure 6.4.2.1 Irish Sea. Landings (t) by gear according to Coun. Reg. 1342/2008 and species, 2003-2009. Note that discard data are not included in this figure.

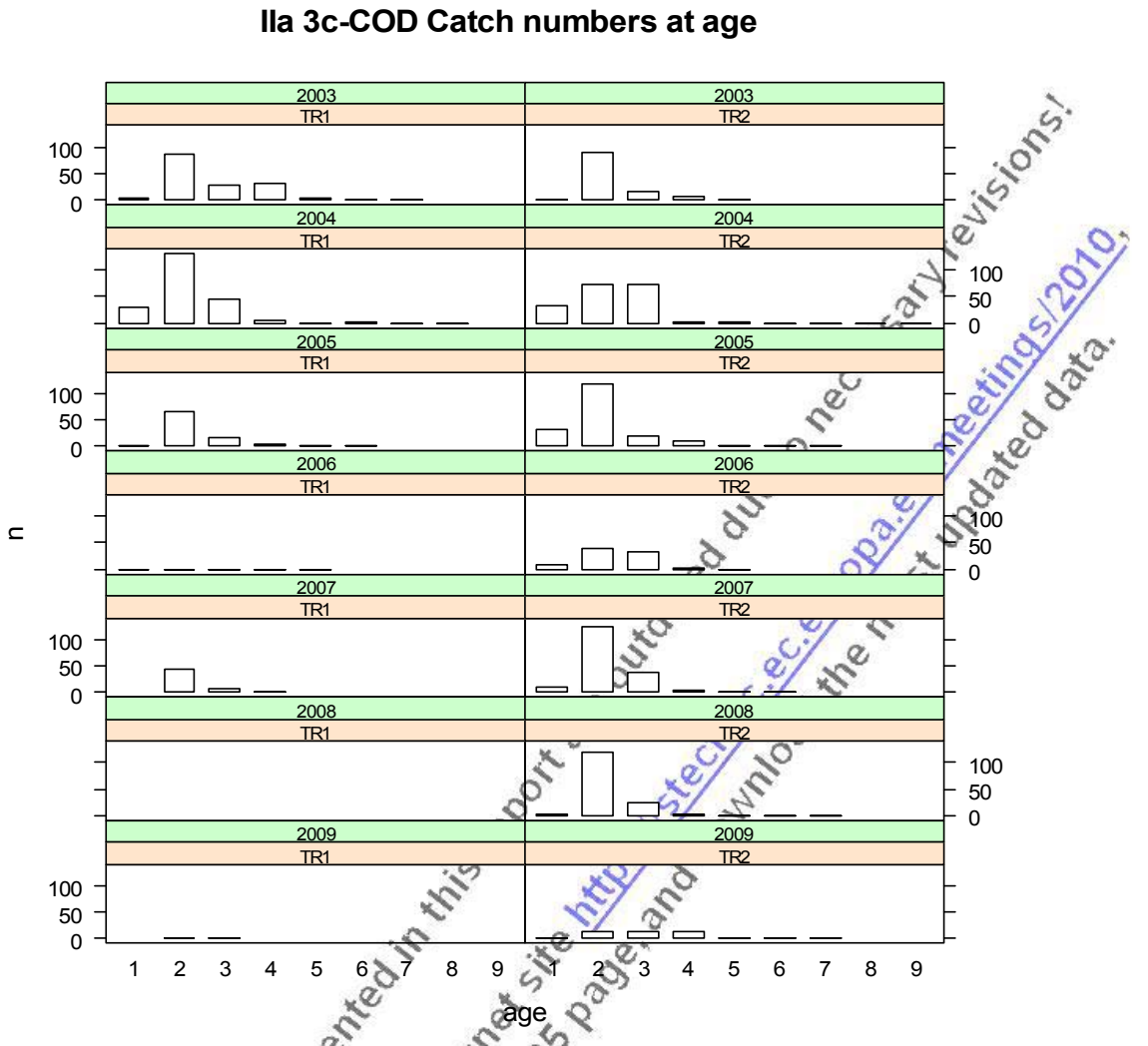


Figure 6.4.2.2 Irish Sea. Cod landings ('000) at ages 1-9 in TR1 and TR2 associated with Coun. Reg. 1342/2008, 2003-2009. Note that no discard data is included in this figure.

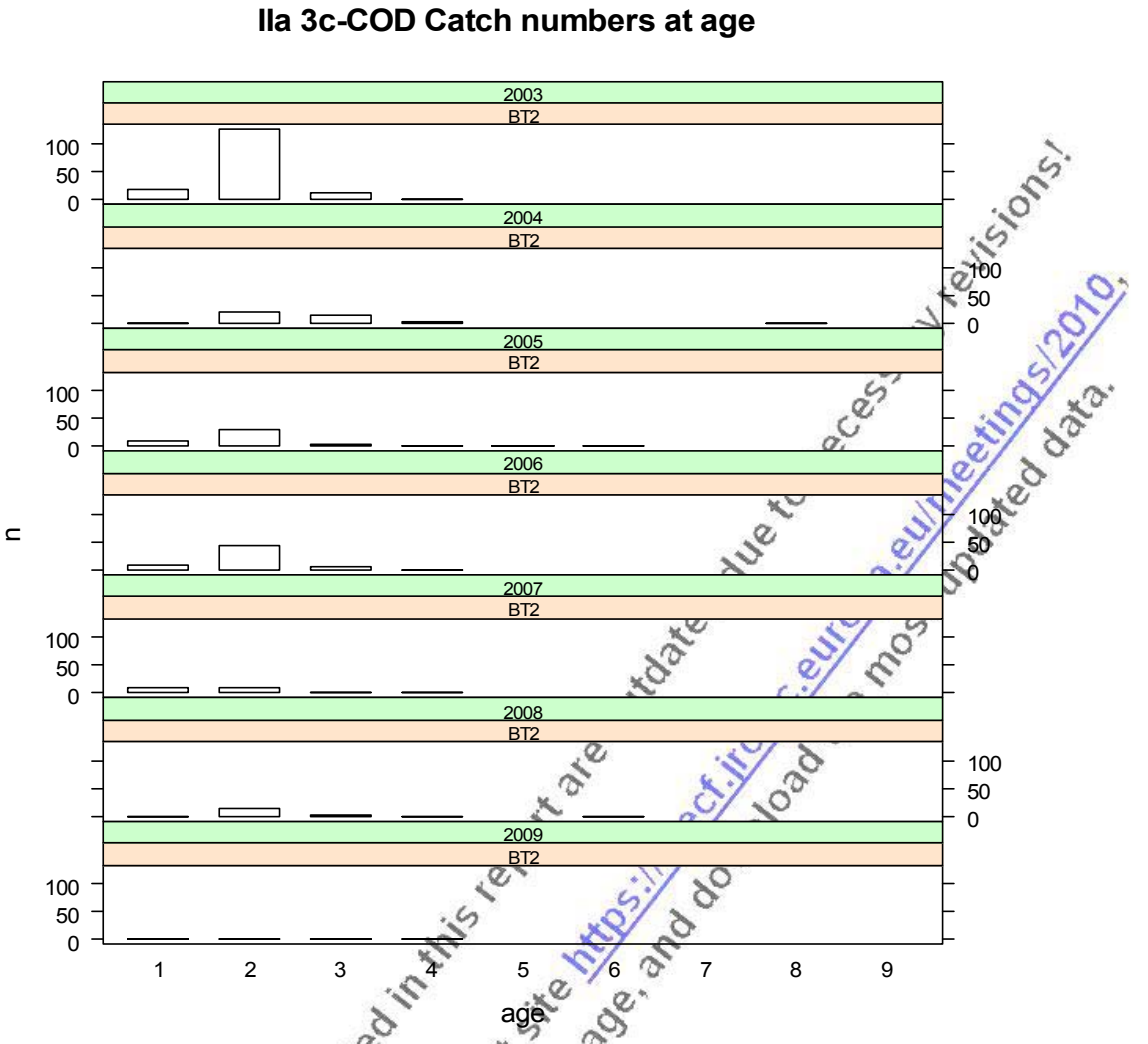


Figure 6.4.2.3 Irish Sea. Cod landings ('000) at ages 1-9 in BT2 associated with Coun. Reg. 1342/2008, 2003-2009. Note that no discard data is included in this figure.

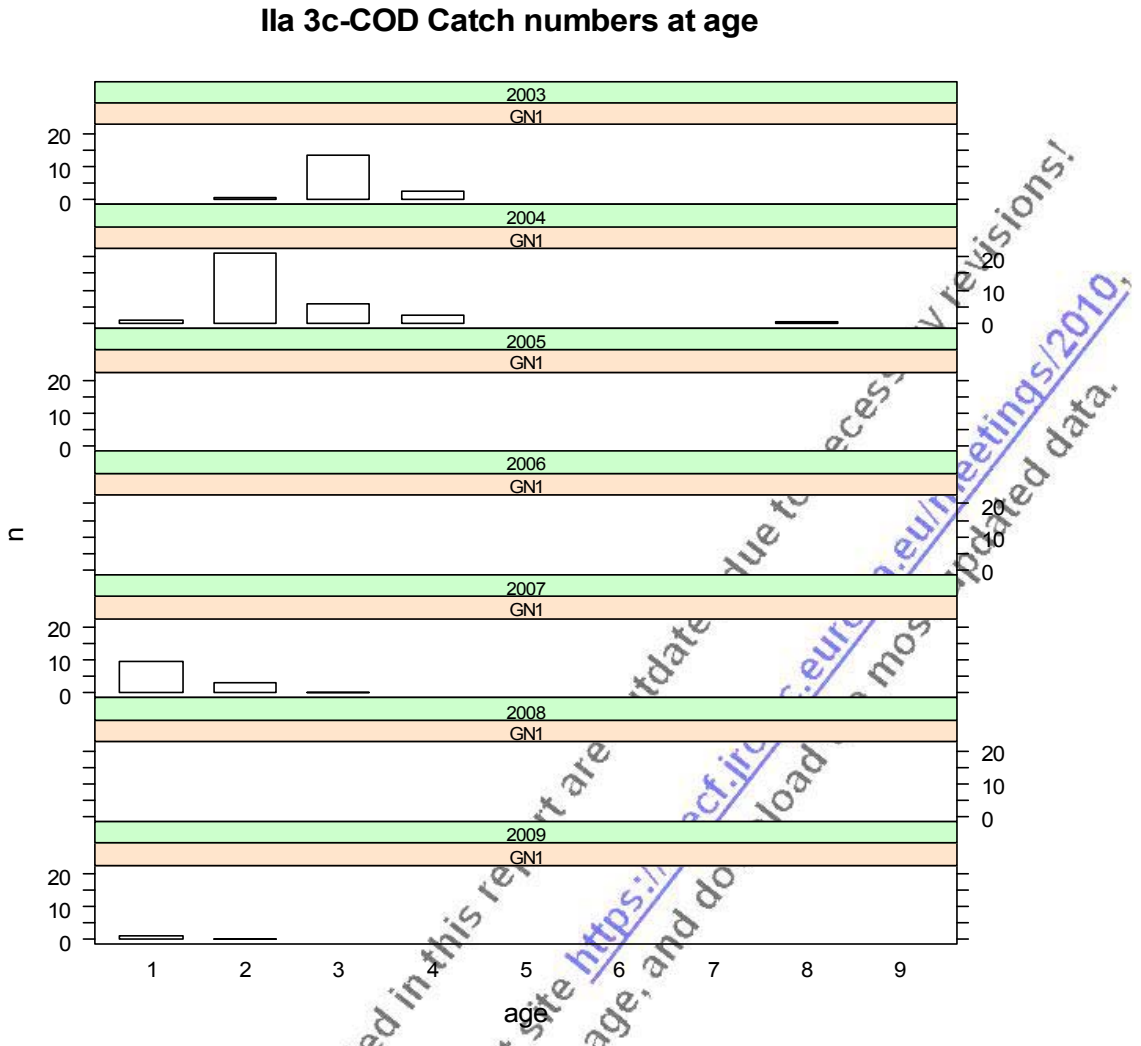


Figure 6.4.2.4 Irish Sea. Cod landings ('000) at ages 1-9 in GN1 associated with Coun. Reg. 1342/2008, 2003-2009.Note that no discard data is included in this figure.

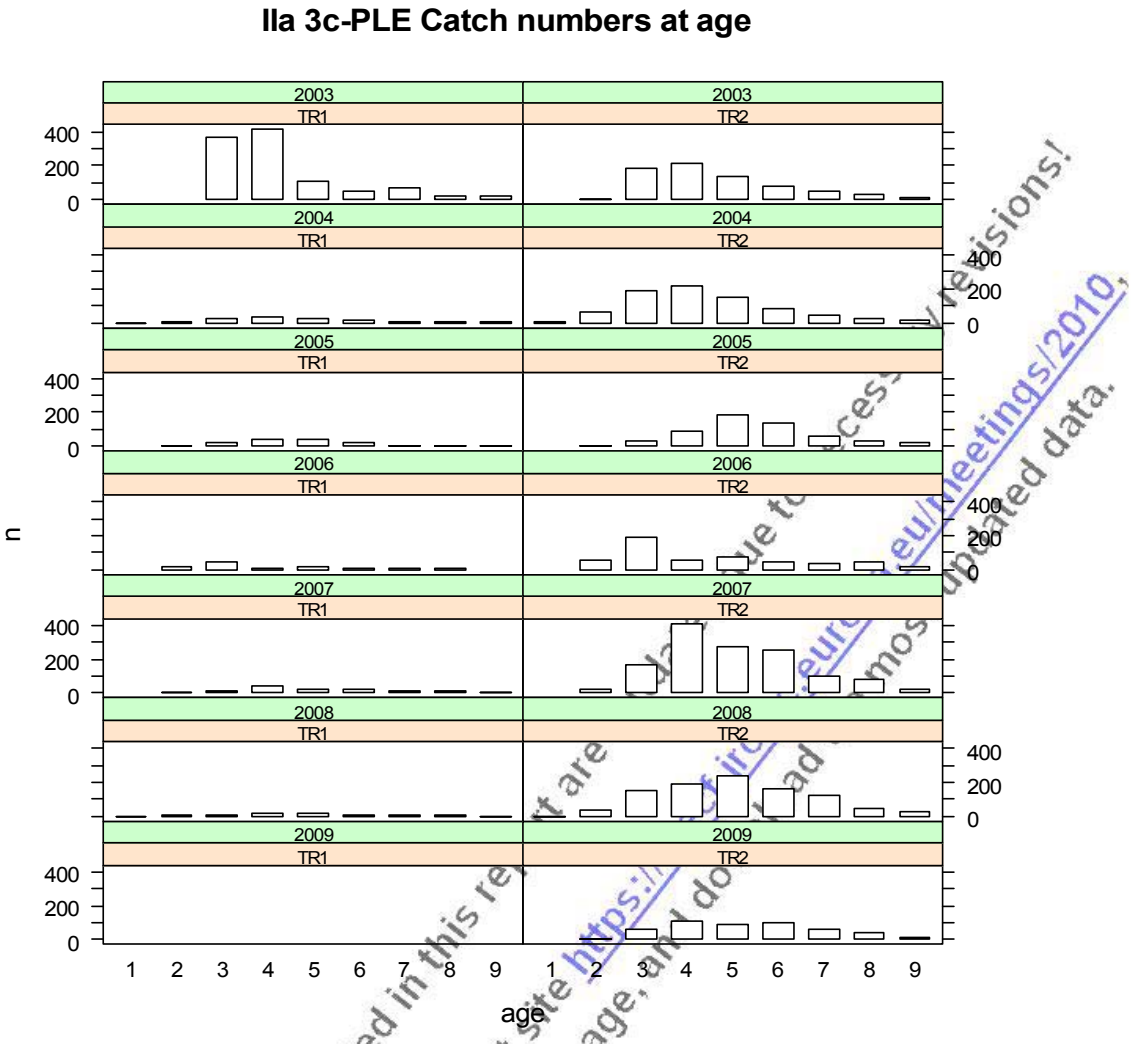


Figure 6.4.2.5 Irish Sea. Plaice landings ('000) at ages 1-9 in TR1 and TR2 associated with Coun. Reg. 1342/2008, 2003-2009.Note that no discard data is included in this figure.

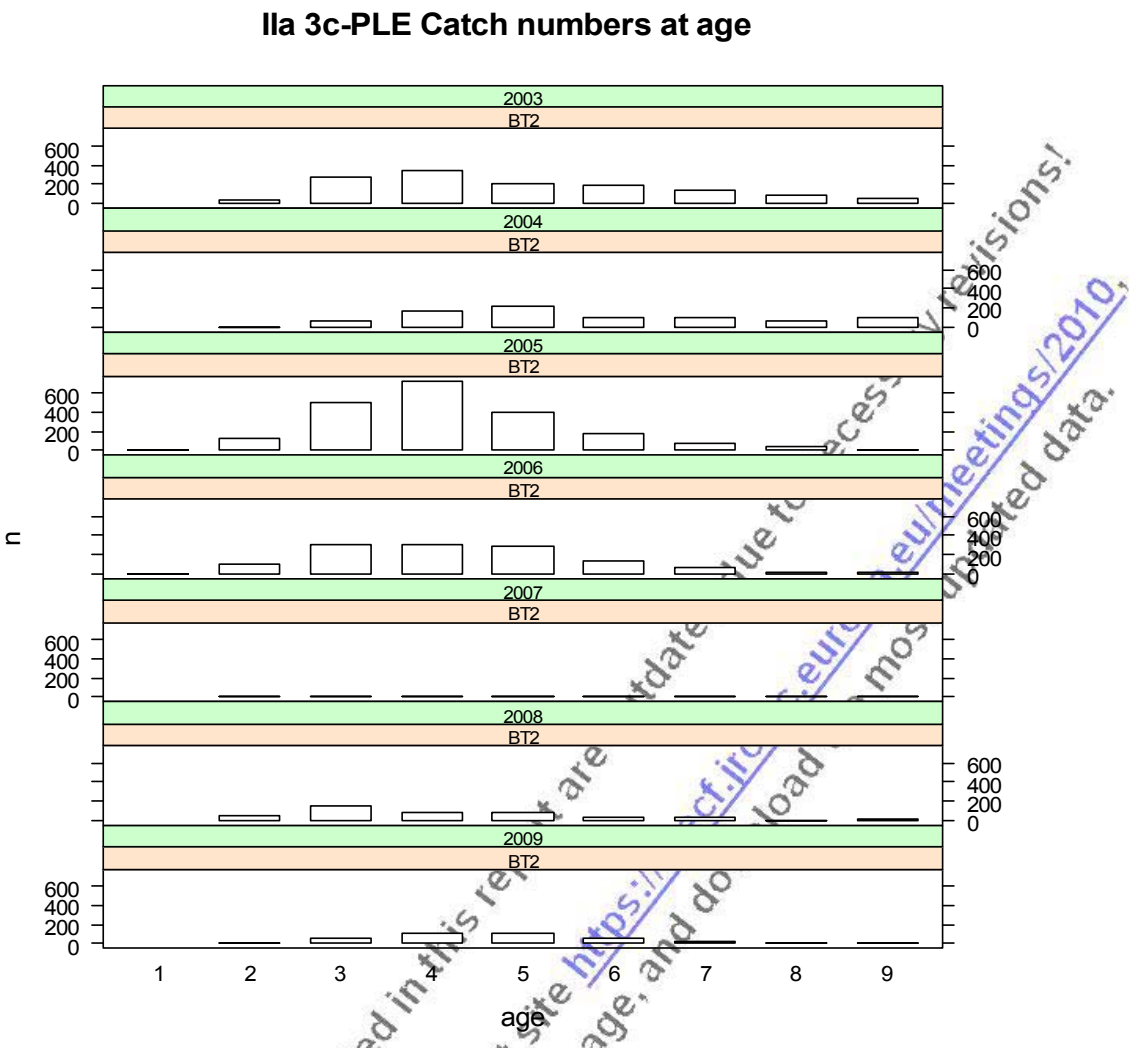


Figure 6.4.2.6 Irish Sea. Plaice landings (‘000) at ages 1-9 in BT2 associated with Coun. Reg. 1342/2008, 2003-2009.Note that no discard data is included in this figure.

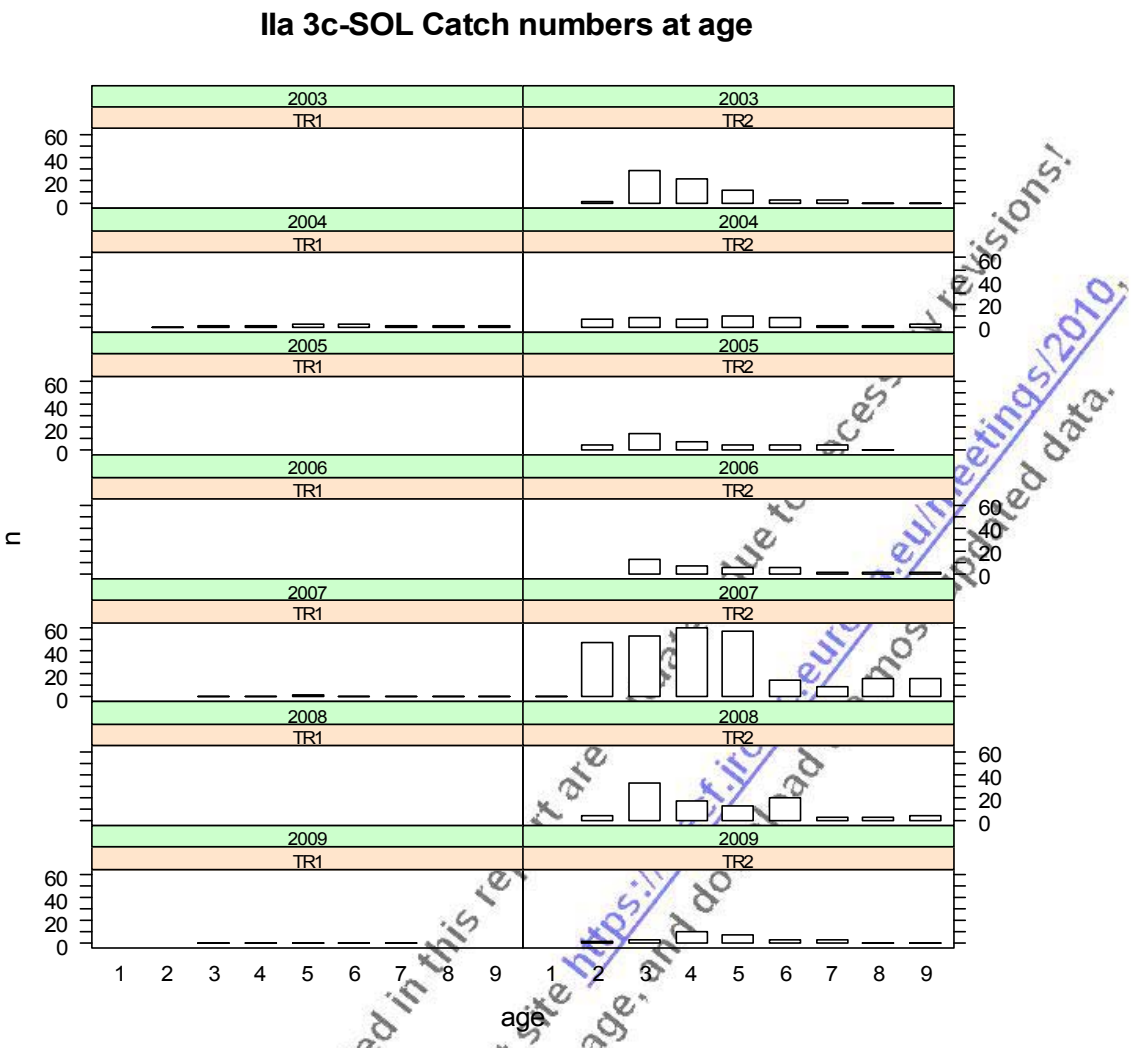


Figure 6.4.2.7 Irish Sea. Sole landings ('000) at ages 1-9 in TR1 and TR2 associated with Coun. Reg. 1342/2008, 2003-2009.Note that no discard data is included in this figure.

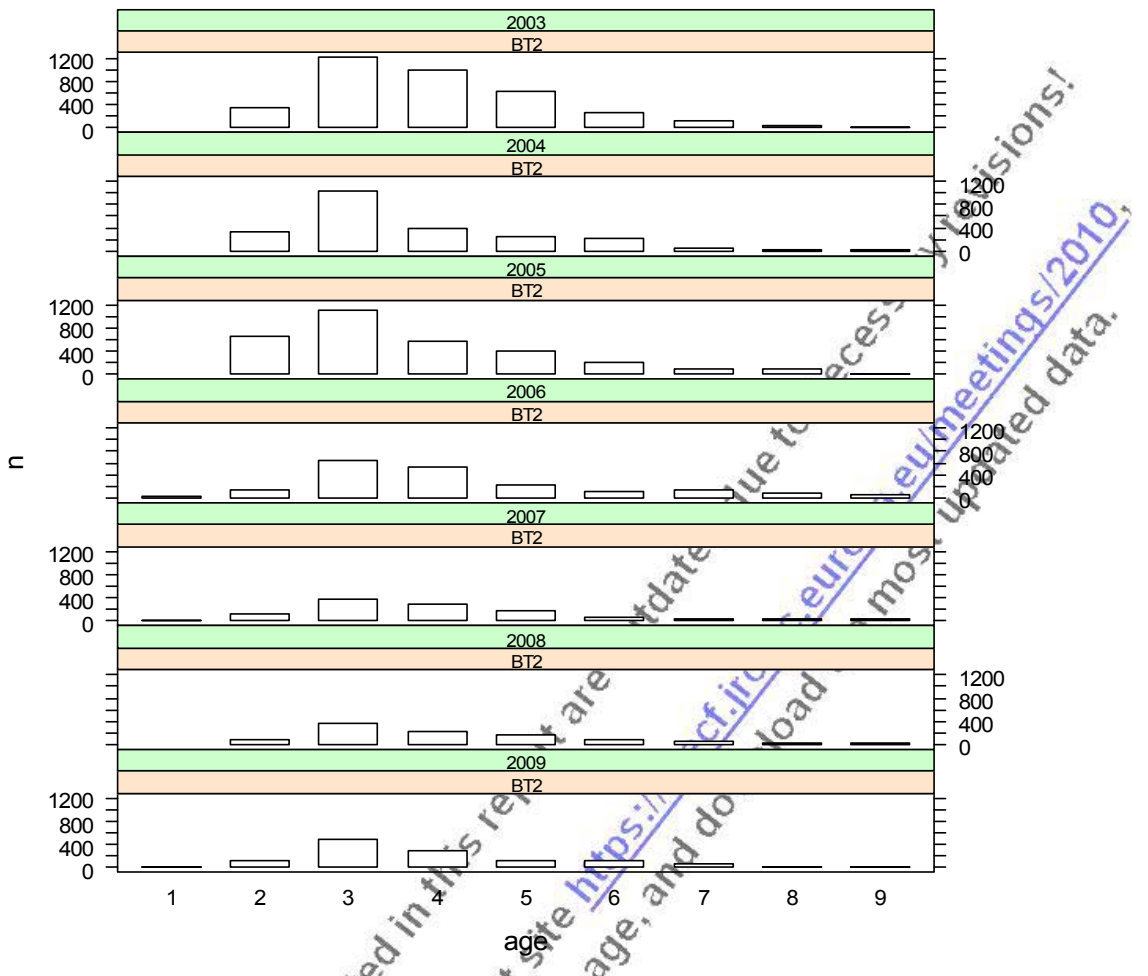


Figure 6.4.2.8 Irish Sea. Sole landings ('000) at ages 1-9 in BT2 associated with Coun. Reg. 1342/2008, 2003-2009.Note that no discard data is included in this figure.

6.4.3. Trend in CPUE of cod, sole and plaice

Given the erroneous discards generated this year within the Irish Sea (see details above) only LPUE time series (landings per unit effort) can be considered for the various gear categories. The units used are grams per kW days-at-sea (g/kW*days)

Only the gears with relatively high effort and/or landings in the Irish Sea will be discussed here, as these are able to provide the most representative figures. Gear groups with little effort, and static gears where the use of kW*days-at-sea as an appropriate indication of effort is debatable, may have unrepresentative values and are not discussed. LPUE values for cod, plaice, and sole are detailed below (Tables 6.4.3.1, 6.4.3.2, and 6.4.3.3 respectively.

The most significant cod landings and effort occur within demersal trawl and seine categories TR1 and TR2, and effort is high in the beam trawl category BT2. Cod LPUE is low in these three gears. TR2 has remained relatively stable, with an increase in 2009, whilst BT2 has declined, and TR1 shows some low level increase (Table 6.4.3.1 and Figure 6.4.3.1). LPUE values for cod are highest within the gillnet gear group, however this category may have unrepresentative values given the effort uncertainty.

Plaice LPUE has shown variable values in both TR1 and TR2 over the period, with declines in most recent years. BT2 has the highest plaice values. LPUE values were relatively stable, declined to 2007 and have since increased (Table 6.4.3.2 and Figure 6.4.3.1). Sole have negligible LPUE values for all except BT2 (Table 6.4.3.3 and Figure 6.4.3.1). LPUE values show the same pattern as plaice, starting relatively stable, with a short decline, and increasing in the most recent years.

Table 6.4.3.1 Irish Sea. Cod LPUE (g/(kW*days)) by gear group according to Coun. Reg. 1342/2008 and year, 2003-2009. CPUE data is limited, but can be made available if requested.

ANNEX	REG AREA	SPECIES	REG GEAR	SPECON	2003	2004	2005	2006	2007	2008	2009	2007-2009
IIa	COD	3c	TR1	CPart13							713	713
IIa	COD	3c	TR1	none	178	263	303	394	598	767	912	700
IIa	COD	3c	TR2	CPart13							29	29
IIa	COD	3c	TR2	none	86	80	74	65	83	62	104	75
IIa	COD	3c	TR3	none								
IIa	COD	3c	BT2	none	86	64	67	47	72	32	24	49
IIa	COD	3c	GN1	none	1017	1573	1432	3441	6713	8662	3116	6697
IIa	COD	3c	GT1	none					1524	418	248	424
IIa	COD	3c	LL1	none	21	17	21	50	82	12133		919

Table 6.4.3.2 Irish Sea. Plaice LPUE (g/(kW*days)) by gear group according to Coun. Reg. 1342/2008 and year, 2003-2009. CPUE data is limited, but can be made available if requested.

ANNEX	REG AREA	SPECIES	REG GEAR	SPECON	2003	2004	2005	2006	2007	2008	2009	2007-2009
IIa	PLE	3c	TR1	CPart13							20	20
IIa	PLE	3c	TR1	none	120	74	60	108	99	67	150	87
IIa	PLE	3c	TR2	CPart13							35	35
IIa	PLE	3c	TR2	none	53	74	81	71	74	52	52	62
IIa	PLE	3c	TR3	none								
IIa	PLE	3c	BT2	none	289	285	298	250	176	197	262	203
IIa	PLE	3c	GN1	none			52					
IIa	PLE	3c	GT1	none								
IIa	PLE	3c	LL1	none								

Table 6.4.3.3 Irish Sea. Sole LPUE (g/(kW*days)) by gear group according to Coun. Reg. 1342/2008 and year, 2003-2009. CPUE data is limited, but can be made available if requested.

ANNEX	REG AREA	SPECIES	REG GEAR	SPECON	2003	2004	2005	2006	2007	2008	2009	2007-2009
IIa	SOL	3c	TR1	CPart13								
IIa	SOL	3c	TR1	none	5	5	4	1	4	2	12	3
IIa	SOL	3c	TR2	CPart13							4	4
IIa	SOL	3c	TR2	none	7	6	7	9	15	7	19	12
IIa	SOL	3c	TR3	none								
IIa	SOL	3c	BT2	none	328	337	346	312	268	297	362	300
IIa	SOL	3c	GN1	none								
IIa	SOL	3c	GT1	none								
IIa	SOL	3c	LL1	none								

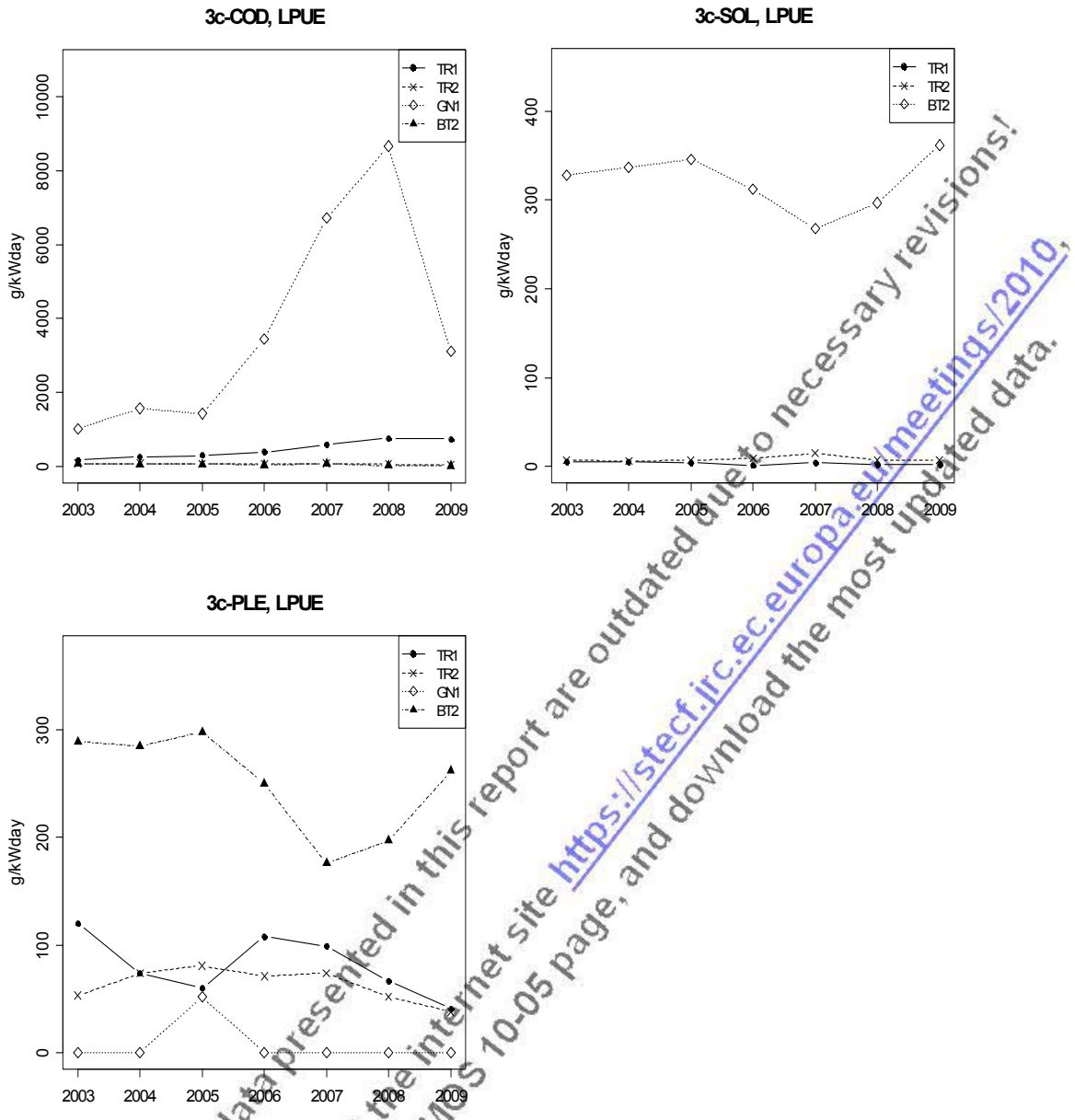


Figure 6.4.3.1. Irish Sea. Trends in cod, plaice, and sole LPUE (g/kW*days) by gear groups associated with Coun. Reg. 1342/2008, 2003-2009.

6.4.4. Ranking according to cod, sole and plaice catches

The unreliable estimates of discards this year within the Irish Sea (see details above) mean that categories can only be ranked according to landings (Table 6.4.4.1) and are provided by weight for cod, plaice and sole.

Ranked cod landings show TR1 to land the greatest proportion of Irish Sea cod (averaging ~40%), followed by TR2 averaging around 30%. BT2 proportions have declined over the period, to 3% in 2008 and 2009, now ranking last out of the four regulated gears within the Irish Sea. The proportion of cod accounted for by GN1, ranking 3rd, increased between 2003 and 2008, dropping in 2009. The 3 year average of proportions is very similar to that of 2009, with gears occurring in the same order. TR1 importance is reduced, while GN1 is inflated compared to 2009.

Two gears dominate plaice landings, TR2 and BT2. BT2 ranks first in the majority of years (landings of around 50% or more). 2007 and 2008 where the exceptions, in these years TR2 ranked first with over 50%. The 2007-2009 average takes this into account, ranking TR2 first. TR1 shows primarily low variable proportions.

Sole occurs primarily within BT2 generally accounting for over 90% of landings. As with plaice, in 2007 and 2008 this percentage fell, accounting for between 80% and 90%. In these years, the contribution of TR2 increased. This change did not affect the overall ranking or the average ranking. Although the average BT2 values are slightly lower than 2009 values. TR1 has consistently accounted for around 1% of annual sole landings.

Table 6.4.4.1 Irish Sea. Ranked derogations according to relative cod, plaice and sole landings in weight (t), 2003-2009. Ranking is according to the year 2009.

ANNEX	REG_AREA	SPECIES	REG_GEAR	2003 Rel	2004 Rel	2005 Rel	2006 Rel	2007 Rel	2008 Rel	2009 Rel	Average 2007-2009
IIa	3c	COD	TR1	0.42	0.4	0.39	0.44	0.28	0.39	0.56	0.41
IIa	3c	COD	TR2	0.31	0.36	0.39	0.33	0.35	0.26	0.29	0.30
IIa	3c	COD	GN1	0.07	0.1	0.06	0.14	0.27	0.32	0.12	0.24
IIa	3c	COD	BT2	0.19	0.11	0.16	0.08	0.09	0.03	0.03	0.05
IIa	3c	COD	LL1						0.01		0.01
IIa	3c	COD	GT1								
IIa	3c	COD	TR3								
IIa	3c	COD	none		0.02						
IIa	3c	PLE	BT2	0.56	0.51	0.58	0.48	0.38	0.38	0.54	0.43
IIa	3c	PLE	TR2	0.17	0.33	0.35	0.39	0.54	0.53	0.41	0.49
IIa	3c	PLE	TR1	0.26	0.11	0.06	0.13	0.08	0.09	0.05	0.07
IIa	3c	PLE	GT1								
IIa	3c	PLE	GN1								
IIa	3c	PLE	TR3								
IIa	3c	PLE	LL1								
IIa	3c	PLE	none	0.01	0.04						
IIa	3c	SOL	BT2	0.94	0.93	0.95	0.92	0.83	0.88	0.91	0.87
IIa	3c	SOL	TR2	0.04	0.04	0.04	0.07	0.16	0.12	0.09	0.12
IIa	3c	SOL	TR1	0.02	0.01	0.01	0.01	0.01		0.01	0.01
IIa	3c	SOL	GT1								
IIa	3c	SOL	GN1								
IIa	3c	SOL	TR3								
IIa	3c	SOL	LL1								
IIa	3c	SOL	none		0.01			0.01			0.01

6.4.5. Unregulated gear

Category 'none none' represents gear types and mesh sizes unregulated by Coun. Reg. 1342/2008. This section provides a break down of the main gears within this category in effort (kW*Days at sea), and cod, plaice and sole catches. 'None none' effort was relatively high within the Irish Sea prior to 2003, accounting for approximately 35% of overall effort. A large proportion of this group was due to Irish effort reported without mesh size information. Since 2003, this category has increased over time, from 18% to over 30% in 2009. This increase primarily results from an increase in dredge and pot activity.

The majority of effort within this grouping prior to 2003 could be divided into 3 main groups, OTTER (bottom trawls), DREDGE, and BEAM (Table 6.4.5.1 and Figure 6.4.5.1). Of these, OTTER contained the greatest effort (around 40%). Since 2003, this group accounts for very little effort (<0.5% since 2007). The majority of effort has been allocated to the dredge group around 55-70%. Much of the remainder is pots (20-30%). Low levels of effort also occur within the pelagic and beam trawl categories.

Landings of cod (Table 6.4.5.2), plaice (Table 6.4.5.3) and sole (Table 6.4.5.4) by unregulated gears within the Irish Sea have been minimal since 2005 (<5t per year). Further more, unregulated gears show no consistency in landings of cod, plaice or sole.

Table 6.4.5.1. Irish Sea trends in unregulated effort (kW*days at sea), according to Annex 1 of Con. Reg. 1342/2008, by major gear type, 2000-2009.

REG GEAR	COUNTRY	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
BEAM	ENG	13,534	17,018	7,906	7,360	1,966	25,324	8,221	8,992	26,350	9,124
BEAM	IRL	792,416	652,385	772,223	23,853	159,015					
BEAM	NIR									3,639	370
DEM_SEINE	ENG							142			
DEM_SEINE	IRL	23,180	27,798	26,993		759					
DREDGE	BEL									51,749	
DREDGE	ENG	266,534	289,651	276,745	225,232	197,412	196,296	313,285	239,832	267,755	213,853
DREDGE	GBJ	47,760		8,192	2,968						
DREDGE	IOM	11,127	7,319	7,378	8,573	5,387	5,194	9,987	13,983	17,732	32,458
DREDGE	IRL	327,890	266,554	275,994	363,880	342,029	170,130	148,109	222,215	174,216	191,075
DREDGE	NED							525	4,725	54,075	17,118
DREDGE	NIR	153,565	212,033	120,708	135,202	137,511	111,692	99,662	118,382	145,810	114,896
DREDGE	SCO	654,669	856,495	802,542	894,237	724,139	777,598	572,146	905,327	1,226,238	1,276,319
none	FRA								906		
none	IRL		709							96	
none	SCO						2,130				
OTTER	BEL		6,808		528						
OTTER	ENG	246		342	62	76	1,416	112	820		
OTTER	IRL	1,988,191	1,768,311	1,767,545	24,648	99,895	4,109	3,940			455
OTTER	NED	3,960		4,412							
OTTER	NIR				696		179	4,022			570
OTTER	SCO				5,792	966		414			
PEL_SEINE	FRA				1,694						
PEL_SEINE	IRL				560	5,872					
PEL_SEINE	NIR	20,940	22,729	29,223	45,458	22,042	61,552	34,310		1,131	
PEL_TRAWL	ENG			23,040	12,729		7,200				
PEL_TRAWL	IRL	112,207	107,654	31,338	48,375	139,711	127,644	58,579	24,970	13,968	5,569
PEL_TRAWL	NED		7,428			14,520	12,797				
PEL_TRAWL	NIR	54,243	35,078	57,566	87,890	65,982	49,486	93,380	140,424	104,430	92,084
PEL_TRAWL	SCO		95,622	1,033			14,700				
POTS	ENG	69,866	111,192	276,786	403,052	346,751	366,190	368,671	341,096	214,599	220,336
POTS	FRA									2,844	2,844
POTS	GBG									397	11,116
POTS	GBJ	65,272	33,456	64,644	71,212	76,378	17,726	11,996	35,952	53,928	78,825
POTS	IOM			186	1,581	1,395		328		30,176	
POTS	IRL	28,797	40,841	38,315	70,717	75,874	108,311	135,097	188,973	206,366	225,442
POTS	NIR	67,980	62,919	30,468	34,180	31,093	26,230	43,426	42,170	97,635	117,418
POTS	SCO	49,070	51,694	2,047	1,565		12,627	31,257	35,190	34,284	95,311
Total		4,751,447	4,673,694	4,625,626	2,472,044	2,448,773	2,098,531	1,937,609	2,323,957	2,727,418	2,705,183

Table. 6.4.5.2. Irish Sea. Unregulated gear (category none) associated with Coun. Reg. 1342/2008 cod landing (t) composition by gear type, 2000-2009.

SPECIES	REG_GEAR	2003 L	2004 L	2005 L	2006 L	2007 L	2008 L	2009 L
COD	BEAM	1	8					
COD	DREDGE	1	1					
COD	OTTER	5	9					
COD	PEL_SEINE		1					
COD	PEL_TRAWL	4	5		1	3		1
COD	POTS	1	4					

Table. 6.4.5.3. Irish Sea. Unregulated gear (category none) associated with Coun. Reg. 1342/2008 plaice landing (t) composition by gear type, 2003-2009.

SPECIES	REG_GEAR	2003 L	2004 L	2005 L	2006 L	2007 L	2008 L	2009 L
PLE	BEAM	8	30					
PLE	DEM_SEINE							
PLE	DREDGE	1	4	3	1			
PLE	none							
PLE	OTTER	5	5	1				
PLE	PEL_SEINE							
PLE	PEL_TRAWL		9				1	2
PLE	POTS	1	1					

Table. 6.4.5.4. Irish Sea. Unregulated gear (category none) associated with Coun. Reg. 1342/2008 sole landing (t) composition by gear type, 2003-2009.

SPECIES	REG_GEAR	2003 L	2004 L	2005 L	2006 L	2007 L	2008 L	2009 L
SOL	BEAM	4	8					
SOL	DREDGE	4	2	4	2	4		
SOL	none							
SOL	OTTER	1						
SOL	PEL_TRAWL							1
SOL	POTS							

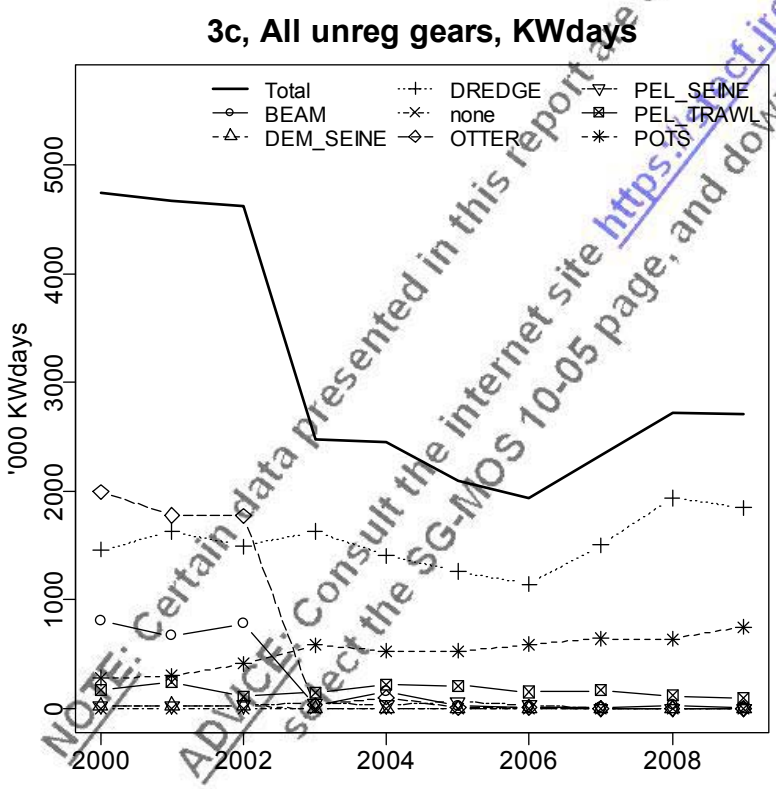


Figure 6.4.5.1. Irish Sea. Effort composition in kW*Days at sea for unregulated gears according to Coun. Reg. 1342/2008 (category none), 2000-2009.

6.4.6. Vessels <10m in Irish Sea

Table 6.4.6.1 provides landings data for vessels under 10m, including data from England, Ireland, and Scotland, for the main species. Irish under 10 meter vessel landings are not recorded by gear type, therefore falling in to the "none" category. The under 10m vessels in the Irish Sea land *Nephrops* in the greatest quantity, totalling between 100 t and 500 t, primarily by otter trawlers, and is showing an increasing trend. Quantities of plaice are also landed, ~60t in 2009. Of other species provided to the group, all were below 10t in 2009. Cod landings by this group have declined over time, with <5t in 2009 compared to 96t in 2003. Landings primarily originate from England, Northern Ireland, and Ireland. In 2009, Scotland showed a far greater presence than in previous years. Irish landings have been minimal in recent years, although it is believed under 10m vessel data may be reliable.

Overall, contribution of the under 10 meter segment to *Nephrops* landings is around 5%, plaice landings account for 13%. In 2009, cod and sole landings relative to their totals is low, <1%.

Table 6.4.6.1. Landings of under 10m vessels by species, gear and nation, 2003-2009.

SPECIES	REG GEAR	COUNTRY	2003	2004	2005	2006	2007	2008	2009
ANF	BT2	ENG		0.01	0.01	0.00			
ANF	DREDGE	ENG						0.01	0.57
ANF	DREDGE	NIR						0.02	
ANF	GN1	ENG	0.20	0.09	0.02		0.01	0.05	0.17
ANF	GN1	NIR							0.06
ANF	GN1	SCO							0.00
ANF	none	IRL		17.37			0.08		
ANF	POTS	ENG							0.05
ANF	POTS	NIR				0.02			0.01
ANF	TR1	ENG	0.07		0.02	0.11	0.02	0.08	0.02
ANF	TR2	ENG	0.02	0.03	0.03	0.21	0.16	0.21	1.39
ANF	TR2	IOM						0.01	
ANF	TR2	NIR	2.37	4.47	2.79	6.23	1.76	4.23	3.09
ANF	TR2	SCO							0.08
COD	BEAM	ENG			0.01	0.02	0.01		
COD	BT2	ENG	0.01	0.01	0.28	0.11	0.00	0.02	
COD	GN1	ENG	0.00		2.24	2.33	1.50	0.89	0.22
COD	GN1	NIR					0.03		
COD	GN1	SCO		0.02					
COD	LL1	ENG						0.01	
COD	LL1	NIR							0.03
COD	none	IRL	92.00	62.35			3.54	0.66	0.01
COD	POTS	NIR				0.02			
COD	POTS	SCO							0.01
COD	TR1	ENG	0.62		0.10	0.01	0.06	0.42	0.05
COD	TR2	ENG	2.34	2.37	1.56	3.36	3.78	0.60	2.25
COD	TR2	IRL						0.00	
COD	TR2	NIR	1.07	2.72	1.96	2.77	1.45	2.58	2.08
COD	TR2	SCO	0.01						0.14
HAD	BT2	ENG		0.00					
HAD	none	IRL	15.00	63.49			0.37	0.17	
HAD	TR1	ENG	0.02						
HAD	TR2	ENG	0.00	0.00	0.01				0.93
HAD	TR2	IRL						0.00	
HAD	TR2	NIR	0.79	1.38	0.41	2.41	1.07	1.77	1.41
HAD	TR2	SCO							0.10
HKE	BT2	ENG		0.01					
HKE	GN1	NIR				0.06	0.01		
HKE	GN1	SCO							0.00
HKE	none	IRL	36.00	24.27				0.04	
HKE	POTS	NIR				0.01			
HKE	TR1	ENG				0.01			
HKE	TR2	ENG				0.00		0.00	0.03
HKE	TR2	NIR	0.26	0.64	0.28	0.88	0.41	0.54	0.30
HKE	TR2	SCO							0.00
JAX	GN1	ENG						0.00	0.00
JAX	TR2	ENG							0.04
MAC	BEAM	ENG				0.11	0.02	0.00	
MAC	DREDGE	ENG							0.03
MAC	DREDGE	NIR						0.01	
MAC	DREDGE	SCO							0.12
MAC	GN1	ENG				0.00	0.36	0.26	0.30
MAC	GN1	NIR						0.15	
MAC	LL1	ENG					0.18	0.03	0.25
MAC	LL1	NIR				5.36	4.57	3.08	0.22
MAC	none	IRL	80.00	81.29		74.00			
MAC	POTS	ENG							0.09
MAC	POTS	NIR				2.84	10.66	5.19	
MAC	POTS	SCO						0.11	0.01
MAC	TR2	ENG				0.06	0.04	0.09	0.19
MAC	TR2	IRL						0.00	
MAC	TR2	NIR				0.45	0.23	0.15	0.03
MAC	TR2	SCO							0.05

Table 6.4.6.1. Continued

SPECIES	REG GEAR	COUNTRY	2003	2004	2005	2006	2007	2008	2009
NEP	DREDGE	SCO				0.07			0.24
NEP	GN1	ENG					0.05		0.10
NEP	GN1	SCO							2.05
NEP	none	IRL		18.18			1.30		
NEP	OTTER	NIR				0.15			
NEP	PEL_SEINE	NIR						0.28	
NEP	POTS	ENG				0.64	0.29	0.20	0.16
NEP	POTS	NIR	0.83	0.83	3.60	12.11	13.09	14.32	1.84
NEP	POTS	SCO		0.01		0.20	0.15	0.14	102.35
NEP	TR1	ENG	0.02					0.01	0.19
NEP	TR2	ENG	7.13	11.07	15.76	13.08	35.87	23.43	42.55
NEP	TR2	IOM						0.06	
NEP	TR2	NIR	111.10	204.02	227.16	360.14	215.56	303.61	319.99
NEP	TR2	SCO	0.62	3.92	3.24	9.51	0.99	1.83	3.72
PEN	POTS	SCO						0.06	0.00
PEN	TR2	SCO						0.32	
PLE	BEAM	ENG			0.69	0.26	0.01	0.01	0.01
PLE	BT2	ENG	0.03	0.10	14.23	16.17	2.74	2.09	
PLE	DREDGE	ENG						0.00	0.01
PLE	GN1	ENG	0.31	2.19	2.91	1.13	5.97	1.56	1.79
PLE	GN1	NIR							0.00
PLE	GN1	SCO		0.02			0.00		
PLE	LL1	ENG						0.05	0.02
PLE	none	IRL	8.10	10.68			0.25	0.08	
PLE	OTTER	ENG	0.25			0.07	0.20		
PLE	POTS	ENG					0.02		0.14
PLE	POTS	SCO			0.02		0.01		0.30
PLE	TR1	ENG	8.87	5.10	1.51	0.61	2.90	5.31	3.00
PLE	TR1	IOM						0.33	
PLE	TR2	ENG	40.48	34.30	69.23	54.06	89.98	57.36	49.65
PLE	TR2	IOM						0.62	0.16
PLE	TR2	IRL						0.00	
PLE	TR2	NIR	0.40	0.45	0.70	3.16	3.16	5.32	3.41
PLE	TR2	SCO	0.07						0.19
POK	GN1	ENG			0.01	0.01	0.00		0.00
POK	GN1	NIR					0.01		
POK	none	IRL	6.00	16.35			0.41	0.10	
POK	POTS	NIR				0.01			
POK	TR2	ENG							0.00
POK	TR2	NIR		0.10					
RAJ	none	IRL	50.90	35.16			2.27	27.58	
SOL	BEAM	ENG			0.19	0.41	0.15	0.11	0.06
SOL	BT2	ENG	0.76	1.12	7.67	8.70	0.58	0.63	
SOL	DREDGE	ENG						0.00	0.17
SOL	GN1	ENG	0.01	0.01	0.02	0.05	0.93	0.57	0.35
SOL	GN1	NIR				0.00			
SOL	GN1	SCO							0.00
SOL	LL1	ENG							0.00
SOL	none	IRL	5.05	2.14			0.05		
SOL	OTTER	ENG	0.06			0.00	0.03		
SOL	POTS	ENG					0.01		0.00
SOL	POTS	SCO			0.01			0.00	0.01
SOL	TR1	ENG	0.30	0.01	0.33	0.04	0.02	0.09	0.05
SOL	TR1	IOM						0.00	
SOL	TR2	ENG	2.49	0.68	0.73	1.32	4.44	2.54	1.04
SOL	TR2	IOM						0.00	0.01
SOL	TR2	NIR	0.10	0.58	0.14	1.01	0.38	1.09	0.84
SOL	TR2	SCO	0.00						0.01

Table 6.4.6.1. Continued

SPECIES	REG GEAR	COUNTRY	2003	2004	2005	2006	2007	2008	2009
WHG	BT2	ENG		0.01	0.28	0.04			
WHG	GN1	ENG							0.00
WHG	none	IRL	11.20	15.34				0.08	
WHG	POTS	SCO							0.00
WHG	TR1	ENG	0.13		0.02			0.08	
WHG	TR2	ENG	1.90	0.33	0.10	0.03	0.04	0.01	6.51
WHG	TR2	IRL						0.00	
WHG	TR2	NIR		0.15		0.25	0.21	2.81	2.14
WHG	TR2	SCO							0.24
COE	BT2	ENG				0.06	0.01	0.00	
COE	GN1	ENG					0.01	0.01	0.01
COE	LL1	ENG			0.05	0.01	0.02		0.01
COE	none	IRL	0.49	1.02				0.02	
COE	POTS	ENG							0.01
COE	TR2	ENG	0.01	0.00	0.01	0.02	0.02		0.16
COE	TR2	NIR	0.06	0.04	0.00	0.04	0.03	0.02	0.01
KEF	POTS	SCO			0.20				

6.4.7. Spatial distribution patterns of effective fishing effort of trawled gears

Spatial figures of effort for the Irish Sea concentrate on those categories identified as significant in recorded effort, and/or cod, plaice and sole catches. Figures use a common scale across years for a given gear group, but scales are unique to each category such that the colours assigned to statistical rectangles for gear group TR1 can not be compared directly to those assigned for TR2 say. Figures use a percentiles scale, i.e. the same number of data values found in each colour band is the same.

TR1: Effort within this category has been declining. Effort was previously spread across the whole Irish Sea. Over time, effort became focused along the western Irish Sea, along the cost of Ireland. This effort has declined and the primary focus is now within the north-west, with lower effort within the east and south (Figure 6.4.7.1).

TR2: Effort has become focused on the two main Nephrops grounds within the Irish Sea, one to the east and one to the west, roughly inline with the Isle of Man (Figure 6.4.7.2). Effort outside of the *Nephrops* grounds has declined, especially in 2009.

BT2: Effort was previously wide spread within this group, although less in the northern Irish Sea. Over time effort has declined and become more focused. Two focuses became visible in 2008, one to the east above Wales, the other to the west, slightly lower (Figure 6.4.7.3). Little change was observed in 2009.

GN1: The distribution of gillnet effort within the Irish Sea has been changeable. Effort appears to be moving away from the central Irish Sea towards more coastal rectangles. A number of areas show greater intensity, along the Welsh coast, above Wales and to the west of the Isle of Man. Effort within the southern Irish Sea, on the join to the Celtic Sea declined in 2009 (Figure 6.4.7.4).

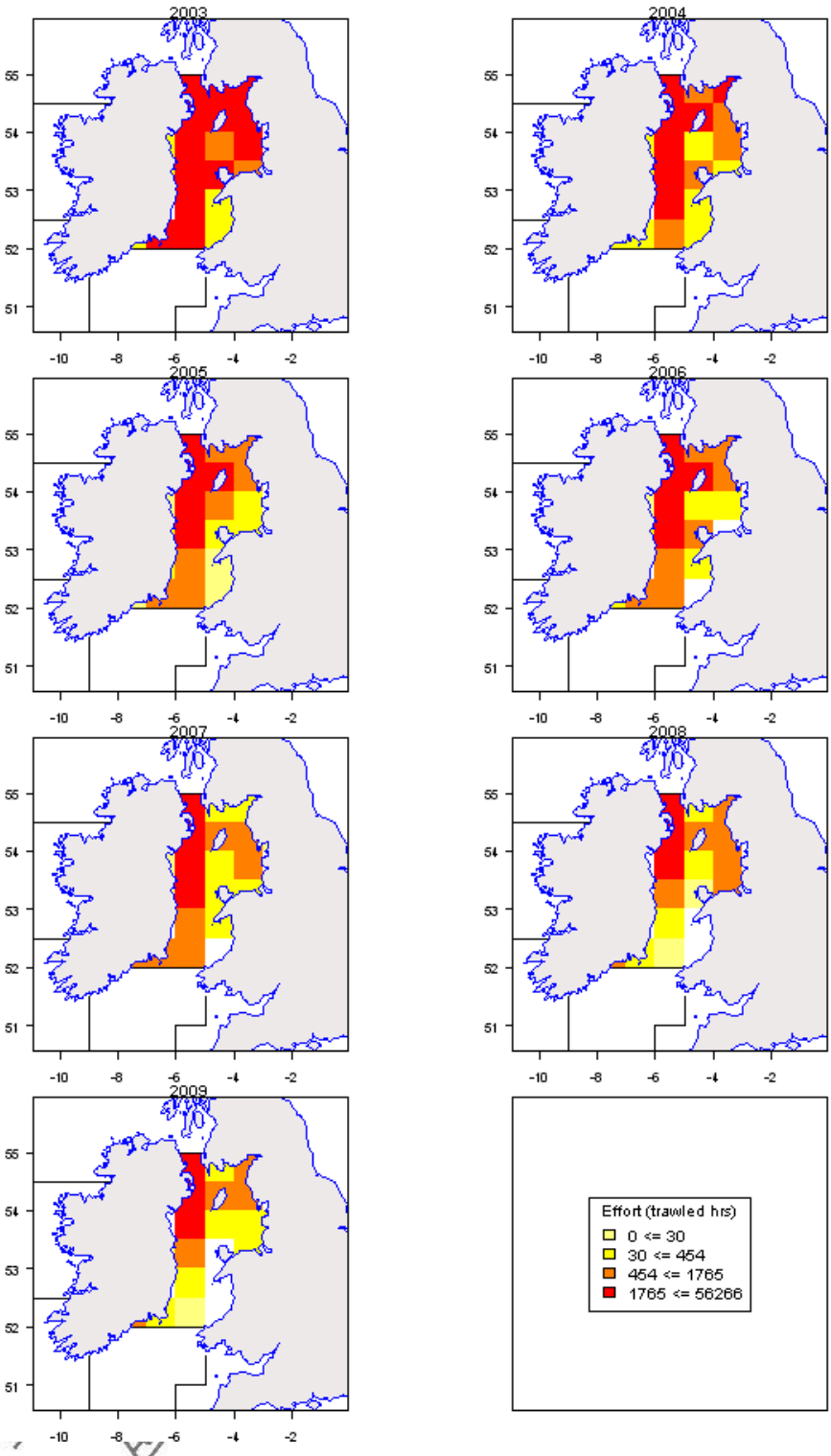


Figure 6.4.7.1. Irish Sea. Spatial distribution of effort (trawled hours) by ICES statistical rectangle for TR1, 2003-2009.

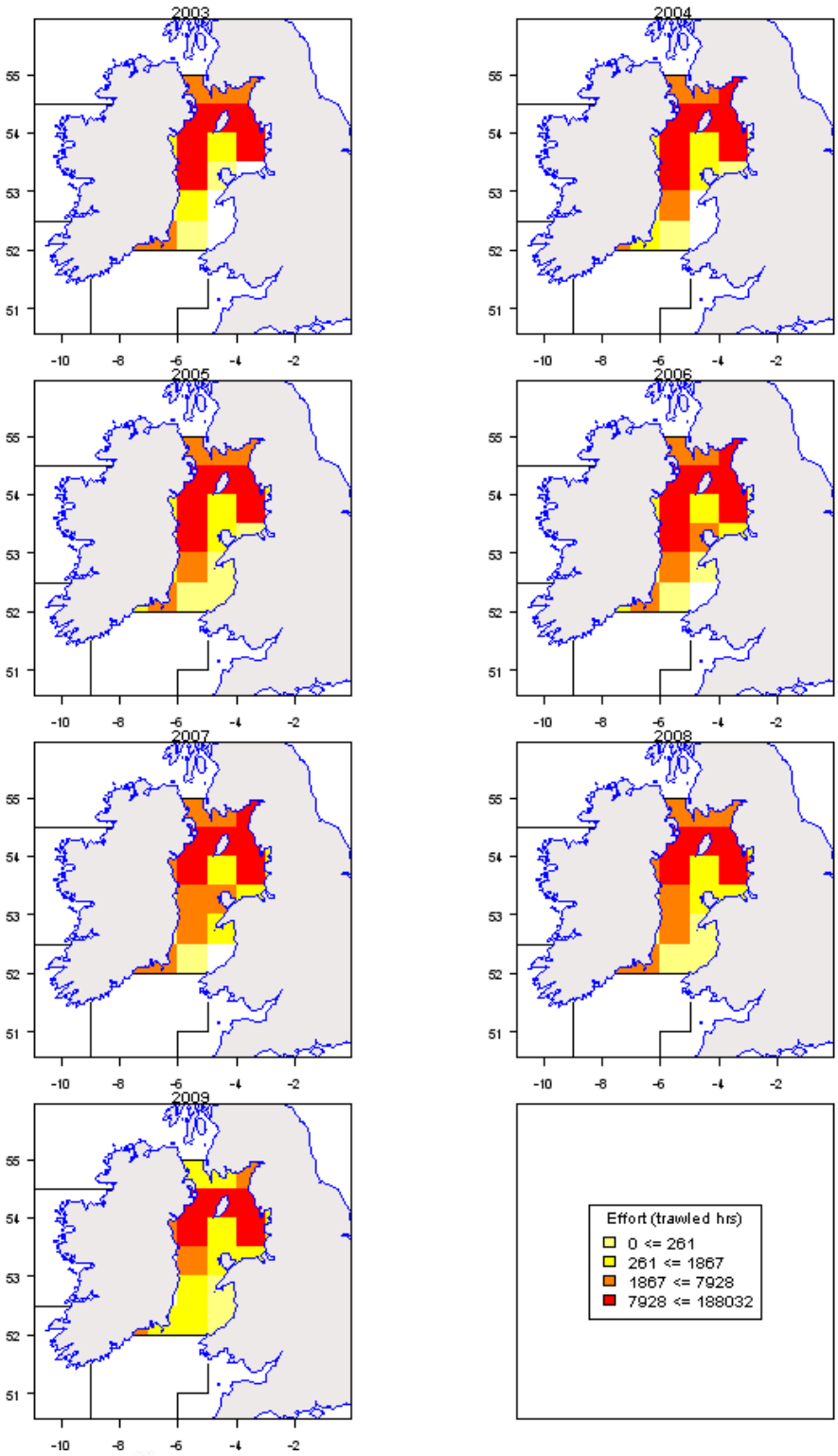


Figure 6.4.7.2. Irish Sea. Spatial distribution of effort (trawled hours) by ICES statistical rectangle for TR2, 2003-2009.

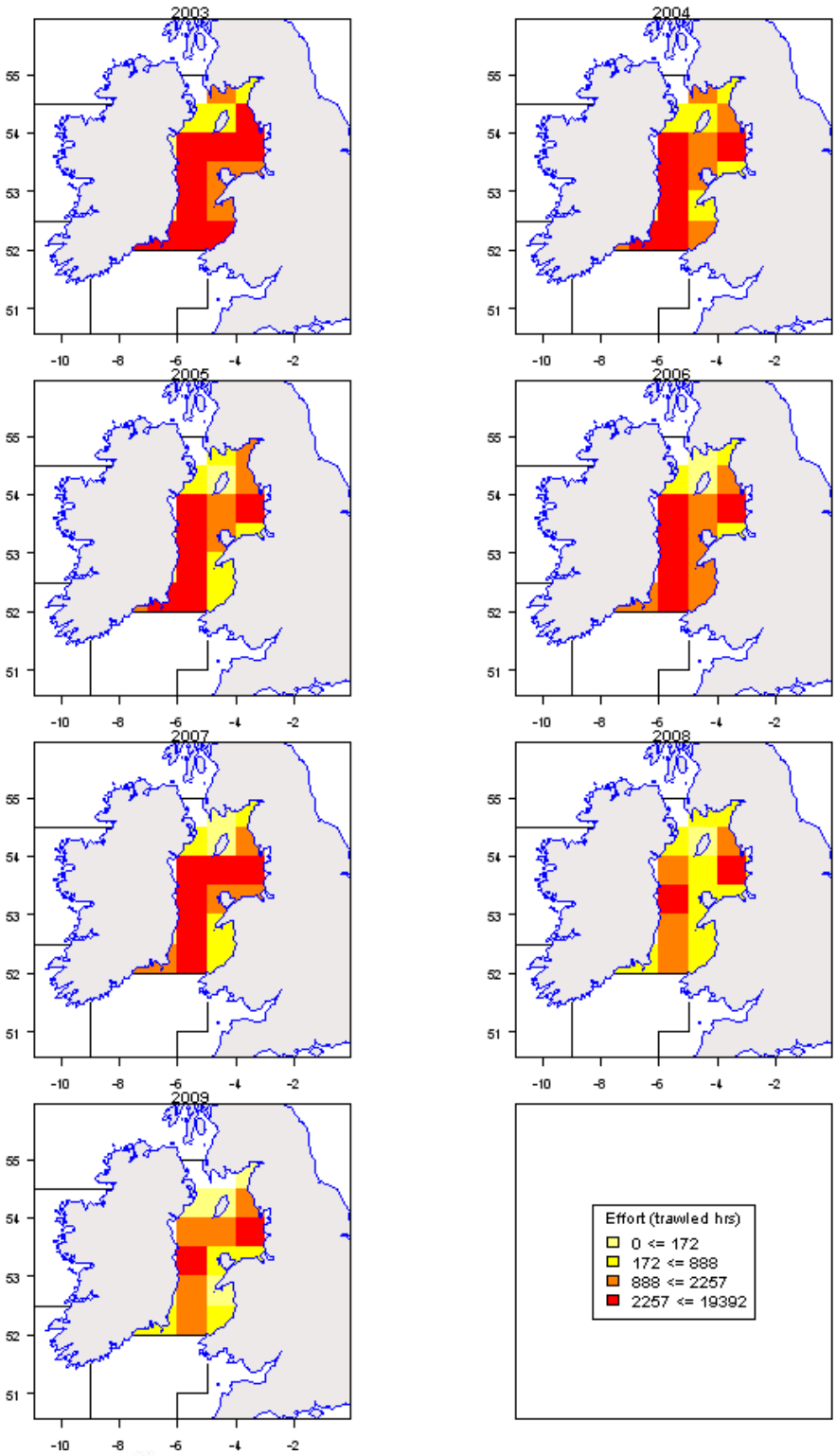


Figure 6.4.7.3. Irish Sea. Spatial distribution of effort (trawled hours) by ICES statistical rectangle for BT2, 2003-2009.

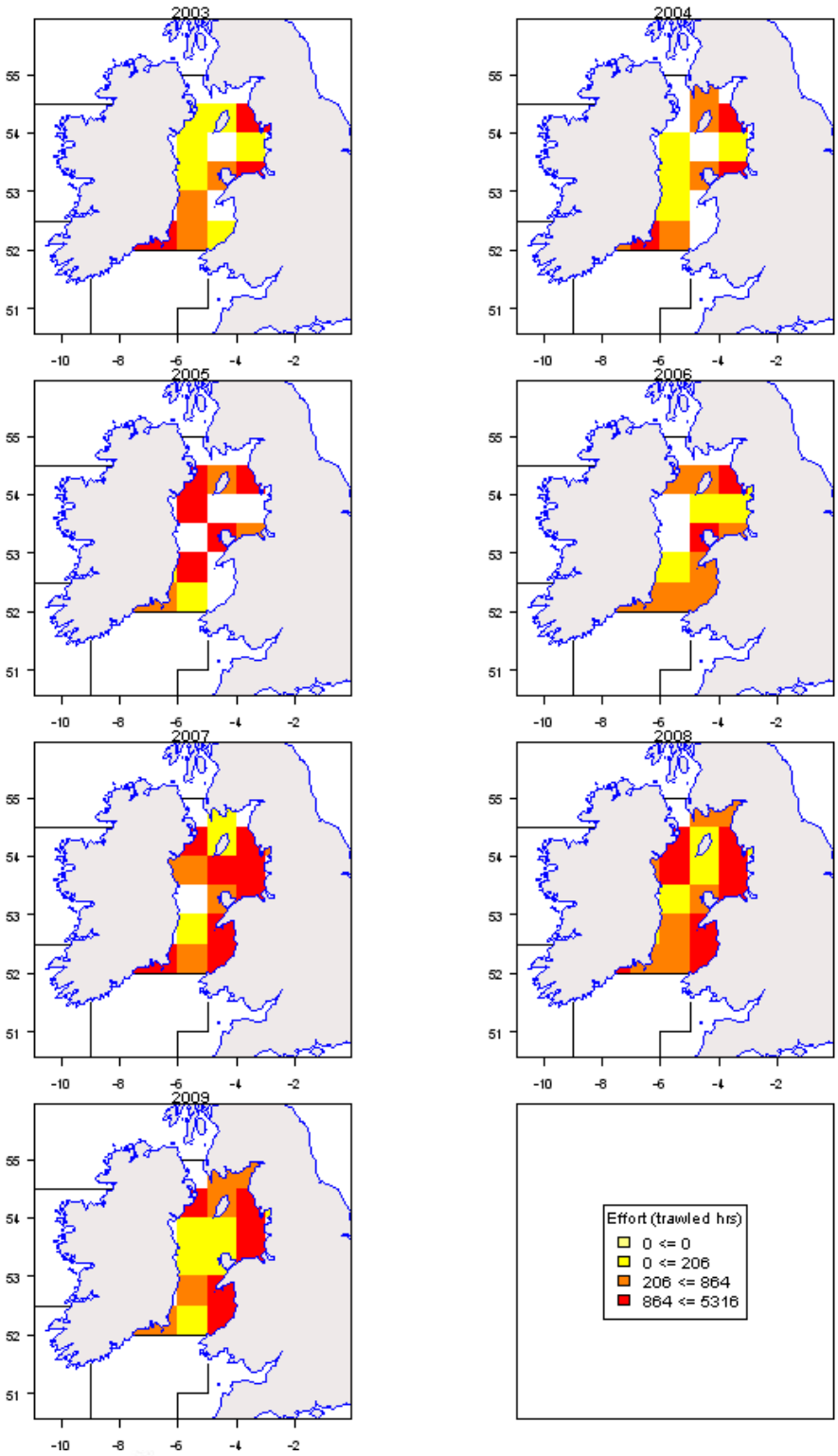


Figure 6.4.7.4. Irish Sea. Spatial distribution of effort (trawled hours) by ICES statistical rectangle for GN1, 2003-2009.

6.5. Management area 3d: West of Scotland

6.5.1. Trend in effort by derogation in management area 3d: West of Scotland

Data quality: Irish vessels contribute to the effort total in management area 3d. According to the international data supplied this constitutes approximately 11-14% of overall effort in the region depending on year (see Table 6.5.1.1). Irish data was not disaggregated by mesh size before 2003. Spain has been allocated 2,460,000 kW*days for demersal fishing in ICES sub areas V and VI under the Western Waters regulation (Coun. Reg. (EC) 1415/2004). As no data has been supplied by Spain in relation to Annex IIA it is not possible to know whether any activity was conducted in Division VIa.

Table 6.5.1.2 shows the percentage change in effort totals supplied by member states compared to data submitted in 2009. There are major revisions to the French effort totals. French effort in the TR1 category has fallen by 70-95% depending on year. Previously French effort for this gear category was recorded as higher than Scottish fleet effort which was not considered likely; the current effort totals are now considered more realistic. Estimates of French gill net effort has also been revised down substantially in all years while effort estimates for unregulated gears has increased by up to 1000%. There are known problems with French data submitted for 2002 in other management areas. There is not an obvious problem with respect to area 3d but given no recording of mesh size from Irish data before 2003 and to be consistent with reporting of other management areas effort trends are considered from 2003 only.

According to the data provided by Member States in 2010 aggregated by categories in Coun. Reg. (EC) 53/2009 (cod plan) the fishery West of Scotland is primarily an otter trawl fishery; beam trawls and static gears are hardly used. With Spanish data made available in 2009, last year's report showed longline gears were clearly the second most important gear category, however Spanish data is not available for division VIa this year.

In terms of kWdays the overall nominal effort in ICES division VIa displays a decrease of 36% since 2003. The majority of that reduction took place between 2003 and 2005. Effort within regulated gears is 42% less in 2009 compared to 2003. Effort by trawl and seine gears (TR gears under Coun. Reg. (EC) 1342/2008) increased slightly from 2006 to 2007 but has fallen to its lowest level in the time series in 2009. Recorded effort in 2009 was 44% lower than that in 2003 and 3% lower than in 2008. Without Spanish data the trend in long line (LL1) effort is uncertain but it is still the most important gear type after TR gears in this area.

Within the trawl gear categories it can be seen from Figure 6.5.1.2 that effort is only significant in the categories TR1 and TR2. There is a clear contrast in effort trend between these two categories; effort using TR1 gears declined markedly between 2003 and 2005. TR1 effort levels have been relatively stable since 2006 with an increase in effort in 2009 to its highest level since 2005. Effort for TR2 gears fell more slowly between 2003 and 2005 and then stabilised, resulting in TR2 effort becoming a little under double the effort of TR1 gears by 2008. Effort in the TR2 category has however fallen by 11% between 2008 and 2009.

Effort which could not be assigned to any existing derogation (none) has fallen by 30% in 2009 compared to 2003 (Table 6.5.1.3). Effort not assigned to a regulated gear type comprises mesh size groups 32-54mm and 55-69mm targeting pelagic resources, effort where mesh size was not identified in the data provided and unregulated gear types such as pots and dredges. Unregulated gears are described in section 6.5.5 but Figure 6.5.1.3 illustrates the importance of unregulated gear effort within the area. Since 2003 total effort recorded for unregulated gears has exceeded that of regulated gears, although the difference in effort totals has reduced in the most recent years.

The effort deployed in Gross tonnage days (GTdays) and number of vessels are not described in this report but can be found on the STECF SGMOS 10-05 website under the Final Report section: https://stecf.jrc.ec.europa.eu/meetings/2010?p_p_id=62_INSTANCE_Hk1G&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&p_p_col_id=column-2&p_p_col_count=1&_62_INSTANCE_Hk1G_struts_action=%2Fjournal_articles%2Fview&_62_INSTANCE_Hk1G_groupId=43805&_62_INSTANCE_Hk1G_articleId=44677&_62_INSTANCE_Hk1G_version=1.0

To record an annual number of vessels the maximum number from any of the four quarters within the year is chosen. Because vessels are not necessarily assigned exclusively to a single derogation, some multiple counting may occur if summing across derogations.

Table 6.5.1.1 West of Scotland. Trend in nominal effort (kW*days at sea) by derogations existing in Appendix 1 of Annex IIA of Coun. Reg. 53/2010 and Member State, 2000-2009. Derogations are sorted by gear type and country.

ANNEX	REG AREA COD	REG GEAR COD	SPECON	COUNTRY	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
IIa	3d	BT1	none	SCO	4894			60296	151480	119958	81195	1803		
IIa	3d	BT2	none	BEL	27240	10308	5595	19005	15910	8027	3700	1732		
IIa	3d	BT2	none	ENG	2294	1550	861	1274	12067	1810				
IIa	3d	BT2	none	FRA		1472								
IIa	3d	BT2	none	GBJ	1857									
IIa	3d	BT2	none	IRL					28827	5068	6335			
IIa	3d	BT2	none	SCO	97861	84675	103897							
IIa	3d	GN1	none	ENG	358510	414572	399429	471808	309423	201100	23028	36174		13832
IIa	3d	GN1	none	FRA	11779	32971	103544	24456	1950	64518	30332	126516	325249	325249
IIa	3d	GN1	none	GER	37830	37059	5292	113084	79545	26780			37334	29088
IIa	3d	GN1	none	IRL	3734	19636	8258	19967	20763	192	3554	13346	9949	3275
IIa	3d	GN1	none	NIR									3564	
IIa	3d	GN1	none	POR			12150	369360						
IIa	3d	GN1	none	SCO	13446	14196	7097	47095	66913	38855	1044	553	6155	
IIa	3d	GT1	none	FRA	564	156032								
IIa	3d	GT1	none	IRL						5410	448			
IIa	3d	GT1	none	SCO	2265	1416		636	435					
IIa	3d	LL1	none	ENG	675637	671367	550463	370933	459841	317428	284497	325325	28103	
IIa	3d	LL1	none	FRA	52948						153194	362784	238288	238288
IIa	3d	LL1	none	IRL	3693	44550	9450	7200	18400	3000		9750		
IIa	3d	LL1	none	NIR	562					1574				
IIa	3d	LL1	none	SCO	73802	88275	181600	124695	148430	306947	371404	518887	378736	703396
IIa	3d	TR1	none	ENG	727872	705017	363993	319445	145914	85851	48469	8711	17020	24446
IIa	3d	TR1	none	FRA	559966	675874	2248655	561553	357678	556272	561003	515399	396385	391827
IIa	3d	TR1	none	GER	66862	45127	23580	19191	12530	35586	27897	23652	3060	4854
IIa	3d	TR1	none	IOM	5070									
IIa	3d	TR1	none	IRL				496439	316477	308681	323881	530292	435213	549300
IIa	3d	TR1	none	NIR	497801	367439	300806	338394	162967	87191	29352	33609	38338	45378
IIa	3d	TR1	none	SCO	7453114	8522924	7565712	5722626	4502155	2635381	2099672	1986484	1990142	0
IIa	3d	TR1	CPart13	SCO										2228713
IIa	3d	TR2	none	BEL							989	795		
IIa	3d	TR2	none	ENG	31896	12554	35937	106861	66311	57345	63616	58724	87267	15721
IIa	3d	TR2	none	FRA	2352	10106	30278	43098	12350			883		4558
IIa	3d	TR2	none	IOM		562		181	1172	181	894		649	
IIa	3d	TR2	none	IRL				1039258	967585	767637	712740	384396	196957	17989
IIa	3d	TR2	none	NIR	328049	354350	391238	280147	353158	350269	453556	758258	652352	523976
IIa	3d	TR2	none	SCO	5065442	4903162	4796552	5760859	5335231	4586126	4380883	4692157	4804497	0
IIa	3d	TR2	CPart13	SCO										4524898
IIa	3d	TR3	none	DEN	46920	47565	130437	156828	91088		11520			
IIa	3d	TR3	none	IRL				2198		342	160	317	11321	1323
IIa	3d	TR3	none	NIR					317					
IIa	3d	TR3	none	SCO	14189	3775	1747	29877	6880	41202		256		
Total of regulated gears					16168449	17226534	17276571	16506764	13645797	10612731	9673363	10390803	9660579	9646111
		none	none	DEN	151351	78011	28933	62183	264885	157518	556042	135713	93959	
		none	none	ENG	563129	739599	660116	763289	597101	529340	1101891	1187425	746498	870027
		none	none	FRA	349267	146887	1294274	431664	411133	177303	361858	354281	275460	275460
		none	none	GBJ			10252							321
		none	none	GER	666036	759653	590791	729409	767344	720815	1066842	1057879	700908	490212
		none	none	IOM	23922	2541	8344	8144	13229	2722	9133	11285	35882	15984
		none	none	IRL	4123007	3604844	3995866	3181075	3460778	2392303	2058378	2008208	2016491	1715513
		none	none	NED	3335277	4343285	3371770	2170705	6497392	5592136	4295071	4118663	3873076	2839787
		none	none	NIR	274378	305302	543148	454206	708614	496663	477614	584492	420274	284696
		none	none	POR					144964					
		none	none	SCO	7067739	7523617	8562814	8904499	9410186	8208630	5548926	4992356	4676514	5194373
Total of unregulated gears					16554106	17503739	19066308	16705174	22275626	18277430	15475755	14450302	12839062	11686373
Grand total					32722555	34730273	36342879	33211938	35921423	28890161	25149118	24841105	22499641	21332484

Table 6.5.1.2 West of Scotland. Relative change in nominal effort (kW*days at sea) reported by Member State compared to the data submitted in 2009; by derogations existing in Appendix 1 of Annex IIA of Coun. Reg. 53/2010.

ANNEX	REG AREA COD	REG GEAR COD	COUNTRY	2000	2001	2002	2003	2004	2005	2006	2007	2008
IIa	3d	BT1	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	BT2	BEL	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	BT2	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	BT2	FRA	0%	20%	0%			0%	0%	0%	0%
IIa	3d	BT2	GBJ	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	BT2	IRL	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	BT2	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	GN1	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	GN1	FRA	-94%	-87%	-72%	-86%	-99%	-85%	-93%	-64%	-63%
IIa	3d	GN1	GER	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	GN1	IRL	0%	0%	0%	0%	0%	0%	0%	0%	-13%
IIa	3d	GN1	NIR	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	GN1	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	GT1	FRA	-42%	563%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	GT1	IRL	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	GT1	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	LL1	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	LL1	FRA	451%	0%	0%	0%	0%	0%	83%	29%	-1%
IIa	3d	LL1	IRL	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	LL1	NIR	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	LL1	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	TR1	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	TR1	FRA	-94%	-93%	-72%	-92%	-94%	-91%	-89%	-90%	-91%
IIa	3d	TR1	GER	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	TR1	IOM	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	TR1	IRL	0%	0%	0%	0%	0%	0%	0%	0%	2%
IIa	3d	TR1	NIR	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	TR1	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	TR2	BEL	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	TR2	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	TR2	FRA	220%	76%	391%	76%	-51%		0%	-56%	
IIa	3d	TR2	IOM	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	TR2	IRL	0%	0%	0%	0%	0%	0%	0%	0%	1%
IIa	3d	TR2	NIR	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	TR2	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	TR3	DEN	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	TR3	IRL	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	TR3	NIR	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	TR3	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	none	DEN	0%	0%	0%	0%	-9%	0%	0%	0%	0%
IIa	3d	none	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	none	FRA	10680%	102%	1072%	3949%	746%	215%	867%	826%	0%
IIa	3d	none	GBJ	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	none	GER	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	none	IOM	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	none	IRL	0%	0%	0%	1%	0%	0%	2%	0%	3%
IIa	3d	none	NED	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	none	NIR	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIa	3d	none	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%

Table 6.5.1.3 West of Scotland. Trend in nominal effort (kW*days at sea) by derogation as defined by Coun. Reg. 53/2010, 2000-2009.

REG AREA COD	REG GEAR COD	SPECON	2003	2004	2005	2006	2007	2008	2009	Rel. chng.03	Rel.chng.08
3d	BT1	none	60296	151480	119958	81195	1803			-100%	0%
3d	BT1 Total		60296	151480	119958	81195	1803			-100%	0%
3d	BT2	none	20279	56804	14905	10035	1732			-100%	0%
3d	BT2 Total		20279	56804	14905	10035	1732			-100%	0%
3d	GN1	none	1045770	478594	331445	57958	176589	382251	371444	-64%	-3%
3d	GN1 Total		1045770	478594	331445	57958	176589	382251	371444	-64%	-3%
3d	GT1	none	636	435	5410	448				-100%	0%
3d	GT1 Total		636	435	5410	448				-100%	0%
3d	LL1	none	502828	626671	628949	809095	1216746	645127	941684	87%	46%
3d	LL1 Total		502828	626671	628949	809095	1216746	645127	941684	87%	46%
3d	TR1	CPart13							2228713	NA	NA
3d		none	7457648	5497721	3708962	3090274	3098147	2880158	1015805	-86%	-65%
3d	TR1 Total		7457648	5497721	3708962	3090274	3098147	2880158	3244518	-56%	13%
3d	TR2	CPart13							4524898	NA	NA
3d		none	7230404	6735807	5761558	5612678	5895213	5741722	562244	-92%	-90%
3d	TR2 Total		7230404	6735807	5761558	5612678	5895213	5741722	5087142	-30%	-11%
3d	TR3	none	188903	98285	41544	11680	573	11321	1323	-99%	-88%
3d	TR3 Total		188903	98285	41544	11680	573	11321	1323	-99%	-88%
3d	Total regulated gears		16506764	13645797	10612731	9673363	10990803	9660579	9646111	-42%	0%
3d	none	none	16705174	22275626	18277430	15475755	14450302	12839062	11686373	-30%	-9%
3d	Total		33211938	35921423	28890161	25149118	24841105	22499641	21332484	-36%	-5%

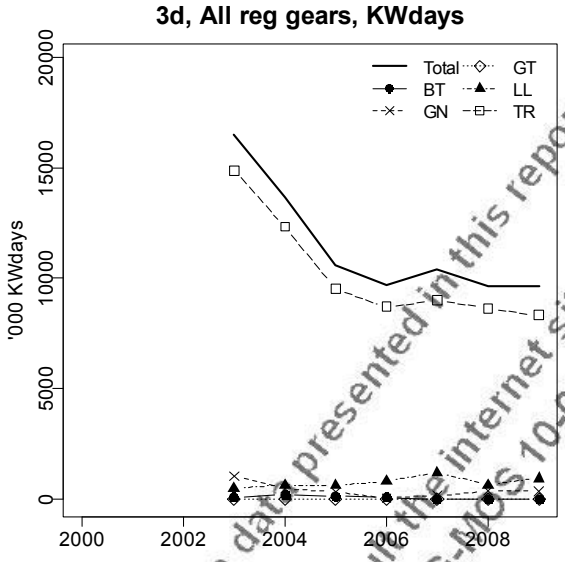


Figure 6.5.1.1 West of Scotland. Trend in nominal effort (kW*days at sea) by gear types as defined by Coun. Reg. ##/2010, 2000-2009.

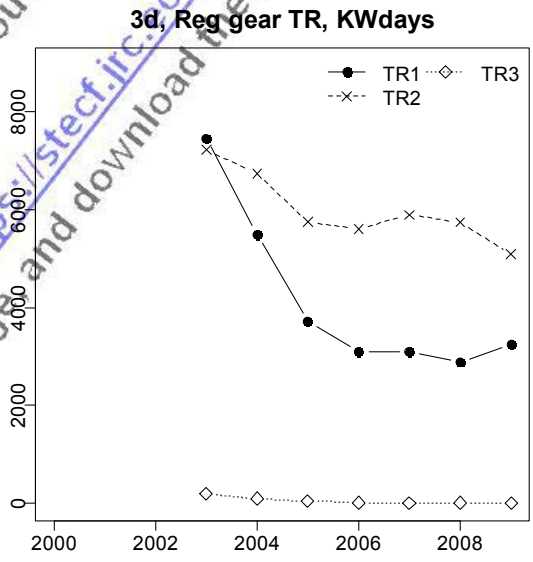


Figure 6.5.1.2 West of Scotland. Trend in nominal effort (kW*days at sea) by TR gear groups as defined by Coun. Reg. ##/2010, 2000-2009.

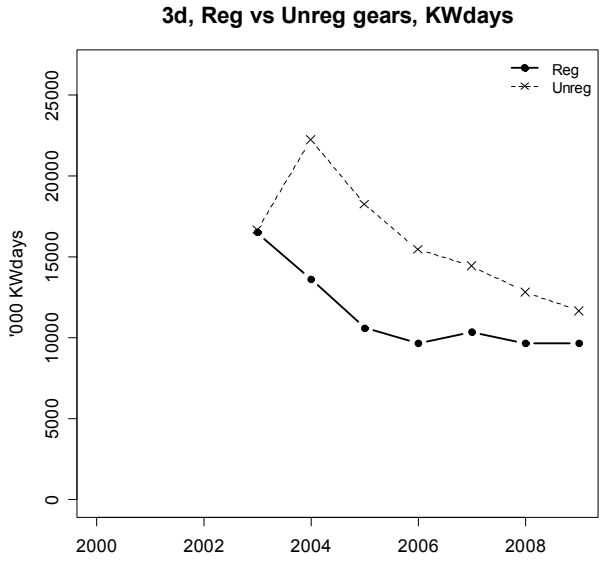


Figure 6.5.1.3 West of Scotland. Trend in nominal effort (kW*days at sea) by regulated gear groups (combined) as defined by Coun. Reg. 1342/2008 compared to unregulated gear groups (combined), 2000-2009.

6.5.2. Trend in catch estimates in weight and numbers at age by derogation in management area 3d: West of Scotland

Table 6.5.2.1 lists the landings and discards for the main species by derogations according to Coun. Reg. (EC) 1342/2008. The data given in Table 6.5.2.1 forms the basis of Figure 6.5.2.1 displaying the relative catch compositions by derogations for the years 2003-2009. For brevity, the figures represent the landings and discards by derogation in weight not for all species caught but only for anglerfish (ANF), cod (COD), haddock (HAD), hake, (HKE), *Nephrops* (NEP), plaice (PLE), saithe (POK), sole (SOL), and whiting (WHG). Discard information on anglerfish, hake, *Nephrops* and also plaice and sole for non-trawl gears was not available for this report. The lack of the dark bars representing discards in these figures for those species indicates a lack of observations.

A description of the catch compositions of the derogations relevant to the area follows:-

TR1 -- The main species caught are haddock and saithe. Although representing considerably smaller tonnages than haddock and saithe, anglerfish are also important and the landings of hake have been steadily rising. The landings of both these two species now well exceed those of cod, the landings of the latter reflect the steady reduction in the cod TAC. Catch of cod in 2008 were the highest in the series because of increased discards, but a reduction in discard is seen in 2009.

TR2 – Landings are dominated by *Nephrops*. Considering landings across all gear categories this species contributes the greatest contribution to landings among the demersal species. Bycatch of the finfish occur with historically high discard rates of haddock and whiting, however haddock catches have declined steadily and whiting catches have greatly reduced in the last three years.

TR3 – Landings for this gear category are negligible for this region.

GN1 – This category lands anglerfish, hake and saithe. The landings of hake and saithe have increased rapidly since 2003 but the overall quantities are still small.

LL1 – The longline fishery lands hake almost exclusively. Landings of hake are up to 6 times that from the gillnet fishery.

Unregulated (POTS) – Of those gears not regulated under Coun. Reg. (EC) 1342/2008 the most significant landings of the species considered come from pots – in this case recordings of Nephrops (although the gear takes numerous other species).

It can be seen that landings of plaice and sole are negligible across all gear categories and west of Scotland it is only relevant to consider age specific data for cod for this region. Also only trawl gears catch enough cod to merit a catch at age analysis.

From Figure 6.5.2.2 it can be seen that catch and landings in the TR2 gear group are predominantly of fish at age two. For the larger TR1 mesh category landings are more evenly spread across ages two to four. In gear group TR2 discards exceed landings for fish at age one. Until 2005 discards from all gears were almost exclusively at ages one and two. In 2006 noticeable discards at age 3 were recorded against the TR1 gears. There was also greatly increased catch and discarding of cod at age one across gear categories in 2006. This is believed to reflect new UK and Irish legislation successfully curtailing illegal landings. It is also considered evidence of a strong 2005 year class as is discards across gear categories of cod age two in 2007. In the TR1 gear category the majority of the catch of age two cod in 2007 and age three cod in 2008 was discarded. This is believed to be because restrictions in cod quotas prevent a greater proportion being landed. The discards of age one cod from TR1 gear are also relatively high in 2009. This is consistent with the 2010 ICES assessment for division VIa cod which indicated a relatively strong 2008 year class.

The overall discard rate of cod (by weight) has increased in years subsequent to 2003 (Table 6.5.2.1). This was due initially to higher discard rates in the smaller meshed category (TR2) but in 2006 the recorded discard rate for the TR1 gear group leapt from 2% to 50%. The rate of discarding currently stands at approximately 80% for both gear categories. As mentioned above it is believed the present high discard rates result from a combination of restrictive quotas and a strong 2005 year class of cod, although the discard rate of age 1 fish in 2009 may also point to a relatively strong 2008 year class.

Table 6.5.2.1 West of Scotland. Landings (t), discards (t) and relative discard rates by species and derogation existing in Table 1 of Annex IIA of Coun. Reg. (EC) 43/2009, 2003-2009.

SPECIES	REG_GEAR	2003 L	2003 D	2003 R	2004 L	2004 D	2004 R	2005 L	2005 D	2005 R	2006 L	2006 D	2006 R	2007 L	2007 D	2007 R	2008 L	2008 D	2008 R	2009 L	2009 D	2009 R
ANF	BT1	1			14			3			1											
	BT2																					
	GN1	71			62			69			32			51			60			88		
	GT1										1											
	LL1																					
	TR1	801	30	0.04	848	1163	0.58	1143	6	0.01	1066	3		1320	288	0.18	1369	78	0.05	1297	4	
	TR2	425	281	0.4	341	225	0.4	329	19	0.05	410			449			209	7	0.03	84		
	TR3																1					
	none	6			7			4			4			7			4					
ARU	TR1	81			16			34			3									6		
	TR2																					
	none	1			1231			198			213			195						30		
BLI	GN1	6						1			1											
	LL1	1									4			1								
	TR1	415			515			406			433			131			113			178		
	TR2	2			1			1	7	0.88	1											
	none																					
BSF	LL1																					
	TR1	86			119			22			63			57			26			80		
	TR2	15			1			2			1											
	none	1																				
COD	BT1	2			6			1														
	BT2																					
	GN1	6			1			6			7			14			5			1		
	LL1	8			5			5			14			8								
	TR1	880	5	0.01	418	7	0.02	373	9	0.02	331	324	0.49	305	736	0.71	272	837	0.75	155	609	0.8
	TR2	245	53	0.18	89	72	0.45	46	36	0.44	34	230	0.87	64	444	0.87	47	11	0.19	11	47	0.81
	none	5			2			1			10			1			1					
CYO	GN1	417			460			97						1								
	LL1	117			147			43			109			5			1					
	TR1	613			147			22			28			66			57			14		
	TR2	13			3			2			2											
	none																					
CYP	GN1	50			7																	
	LL1	119			102			86			154			68								
	TR1																					
	none													9								
DCA	GN1				4																	
	LL1	1																				
	none																					
ETR	LL1																14					
	none																					
ETX	GN1																					
	LL1							1														
	none																					
FOX	GN1	3			4																	
	LL1	19			46			5			52			38			33			12		
	TR1	449	10	0.02	218	4	0.02	136			86			110	15	0.12	79			115		
	TR2	13	14	0.52	8	29	0.78	8	2512	1												
	none																					
GUP	GN1	92			38																	
	LL1	177			103			29			106			2			2					
	none																					
GUQ	GN1	288			288			23														
	LL1	161			160			28			31			8								
	TR1																					
	TR2		2	1																		
	none																					
HAD	BT1	1			1						1											
	BT2																					
	GN1	2			1			3			4			9			12			13		
	LL1	1			1			5			5			5								
	TR1	4422	3548	0.45	2668	2523	0.49	2778	1333	0.32	5358	5505	0.51	3329	3140	0.49	2439	884	0.27	2651	1664	0.39
	TR2	789	2991	0.79	502	3175	0.86	239	1199	0.83	207	954	0.82	264	842	0.76	235	459	0.66	57	31	0.35
	TR3				1																	
	none	83	14	0.67	39	15	0.34	3			13			15	7	0.44	18					
HKE	BT1																					
	BT2																					
	GN1	11			14			32			86			309			1033			1032		
	LL1	144			307			699			1118			1816			893			2014		
	TR1	210	150	0.42	381	372	0.49	533	405	0.43	446			609	432	0.41	746	97	0.12	807	850	0.51
	TR2	119	514	0.81	180	1073	0.86	149	264	0.64	167			107			97	334	0.77	50		
	TR3																1					
	none	11			2			3			3			2			2			282		

Table 6.5.2.1 (cont.) West of Scotland. Landings (t), discards (t) and relative discard rates by species and derogation existing in Table 1 of Annex IIA of Coun. Reg. 53/2010, 2003-2009.

SPECIES	REG_GEAR	2003 L	2003 D	2003 R	2004 L	2004 D	2004 R	2005 L	2005 D	2005 R	2006 L	2006 D	2006 R	2007 L	2007 D	2007 R	2008 L	2008 D	2008 R	2009 L	2009 D	2009 R
JAX	GT1							116														
	TR1	2	331	0.99	1	63	0.98		585	1	2	5	0.71		92	1	2	44	0.96	9	9	0.5
	TR2	5	147	0.97	8	223	0.97		114	1	2						1	2	0.67			
	none	23273			17736			14181			11197			22487			23875			18708		
MAC	GN1																1					
	GT1							66														
	LL1																					
	TR1	4	289	0.99	1	79	0.99	2	40	0.95	1			3	1	0.25	8	840	0.99	13	15	0.54
	TR2	65	139	0.68	539	260	0.33	1	117	0.99	7			5			4	5	0.56			
	TR3							439														
	none	156518			128650			114494			99491			100771			85125			138864		
NEP	BT1	2																				
	GN1				1																	
	LL1																					
	TR1	407			195			367			521			514			470			396		
	TR2	8064			7821			7729			10330			12891			11992			9731		
	TR3				1									1			1					
	none	465			538			598			611			582			580			606		
ORY	GN1																					
	TR1	1																				
	TR2	1			1			5			1											
	none				1																	
PLE	BT1	42			10			9														
	BT2	1			3																	
	GN1																					
	TR1	199			107	2524	0.96	36	19	0.35	36			46	91	0.66	33	14	0.3	41	1	0.02
	TR2	156	459	0.75	64	470	0.88	53	36	0.4	33			30			12	1	0.08	2		
	TR3																					
	none	3			12			1						1			1					
POK	BT1				6						2			1								
	GN1	12						3			53			252			322			322		
	LL1	2			2			4			7			17			6			4		
	TR1	3732	8006	0.68	2726	631	0.19	4071	5958	0.59	5187	2921	0.36	3567	1125	0.24	3916	1514	0.28	4613	1	
	TR2	80	162	0.67	39	65	0.62	30	17	0.36	11	274	0.96	7	36	0.84	5	318	0.98	4		
	none	21			3			11			22			4						2		
RAJ	BT2				1																	
	GN1	1			12									1			4					
	GT1										7											
	LL1							1														
	TR1	71	1069	0.94	60	1912	0.97	37	138	0.79	23	186	0.89	44	680	0.94	49	183	0.79	70	2553	0.97
	TR2	274	2943	0.91	262	5559	0.95	150	2159	0.94	137			61			48	34	0.41	4		
	TR3																					
	none	5			28			7			5			9			7			2		
RNG	LL1																					
	TR1	126			100			44			15			4			8	4	0.33	15		
	TR2				6			11	11	0.5	3											
	none																					
SBL	LL1													31								
	TR1																					
	TR2								1	1												
	none																					
SCK	GN1	194			7																	
	LL1	81			108			19			25			2								
	TR1				1																	
	none																					
SHO	TR1														3	1					1	1
	TR2		35	1		89	1		3	1												
	none																					
SOL	BT1																					
	BT2	5			2																	
	GN1																					
	TR1	1			3			1						2	4	0.67	2			3		
	TR2	29	22	0.43	17	6	0.26	14			12			14			10			1		
	TR3																					
	none	1			3			2						6			3					
SYR	LL1													34								
	TR1																					
	none																					
WHB	TR1		48	1		1	1		27	1					4	1		4	1		2	1
	TR2		137	1		359	1		60	1								19	1			
	TR3							1475									415					
	none	27785			125847			111015			131475			46748			29798			34302		
WHG	BT1																					
	BT2																					
	GN1				1												2			2		
	LL1																					
	TR1	687	376	0.35	436	1496	0.77	131	284	0.68	184	67	0.27	413	145	0.26	354	37	0.09	455	749	0.62
	TR2	659	2602	0.8	367	2622	0.88	204	659	0.76	197	6014	0.97	68	326	0.83	84	267	0.76	25	57	0.7
	TR3																					
	none	7			3									1			1					

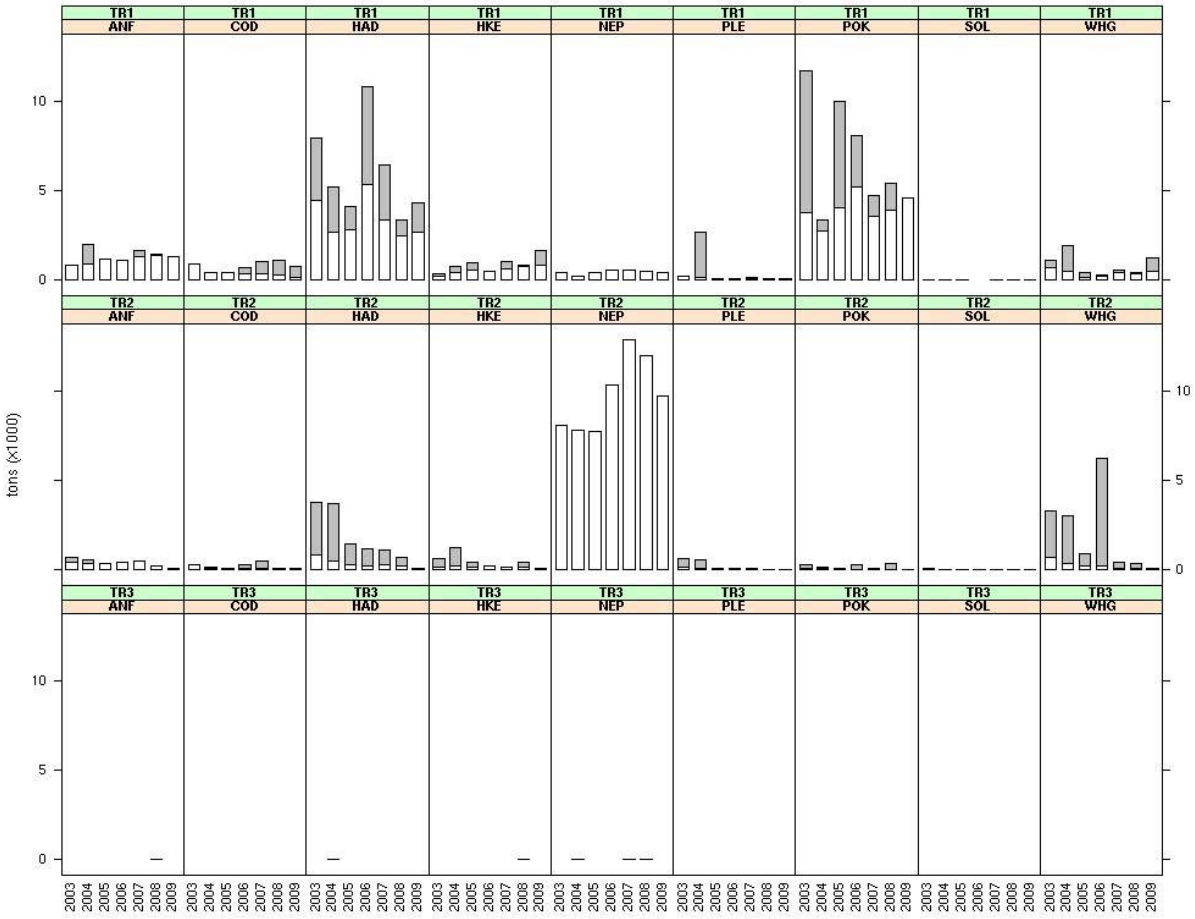


Figure 6.5.2.1 West of Scotland. Landings (t) and discard (t) by derogations in Coun. Reg. (EC) 1342/2008 and species, 2003-2009 (from left to right). White bars represent landings, grey bars discards. Note that discard data are only available for some species (COD, HAD, POK and WHG) and gears. The lack of discard information for a given species/gear in this figure represents no information rather than zero discards.

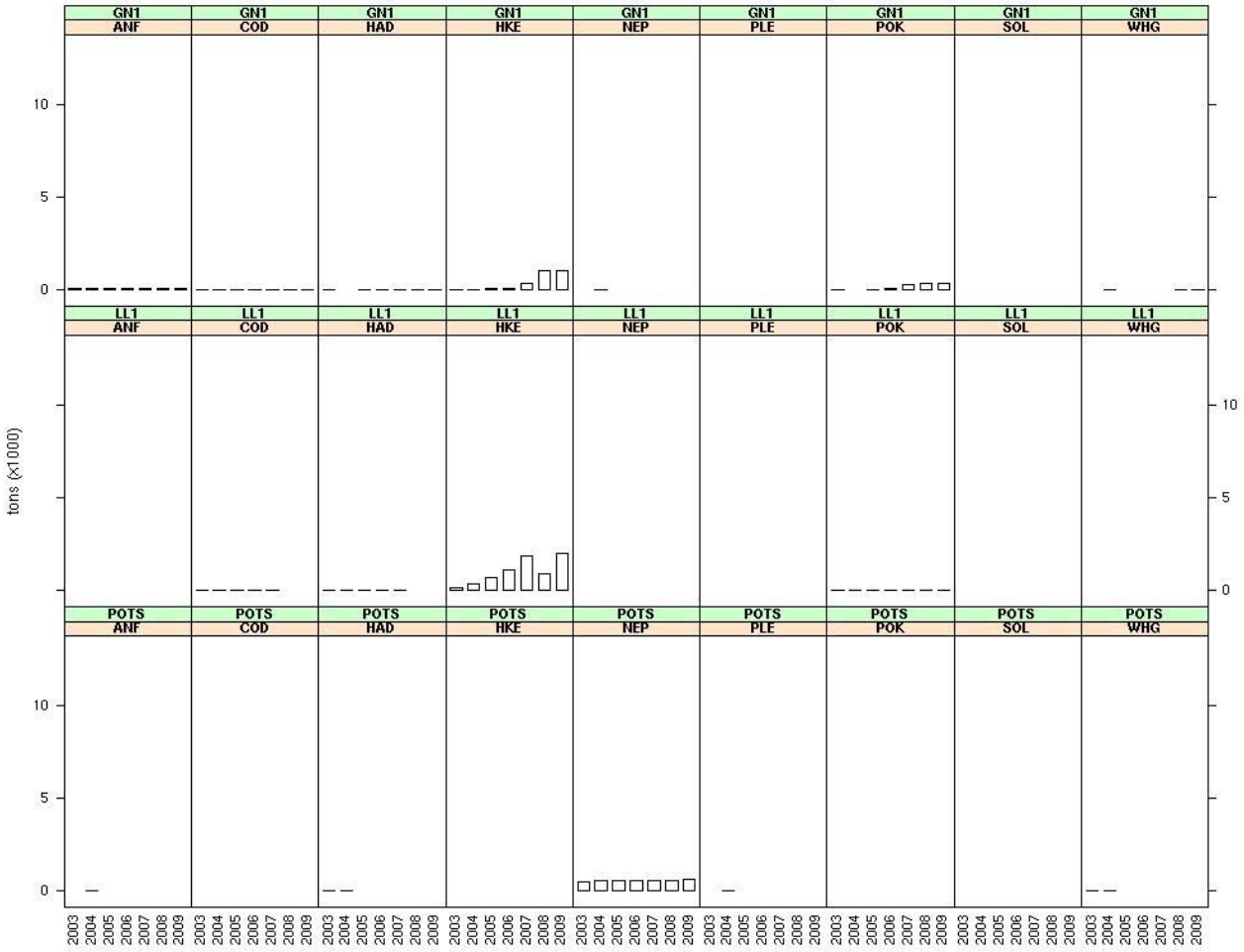


Figure 6.5.2.1 (cont.) West of Scotland. Landings (t) and discard (t) by derogations in Coun. Reg. (EC) 1342/2008 (also POTS) and species, 2003-2009 (from left to right). White bars represent landings, grey bars discards. Note that discard data are only available for some species (COD, HAD, POK and WHG) and gears. The lack of discard information for a given species/gear in this figure represents no information rather than zero discards.

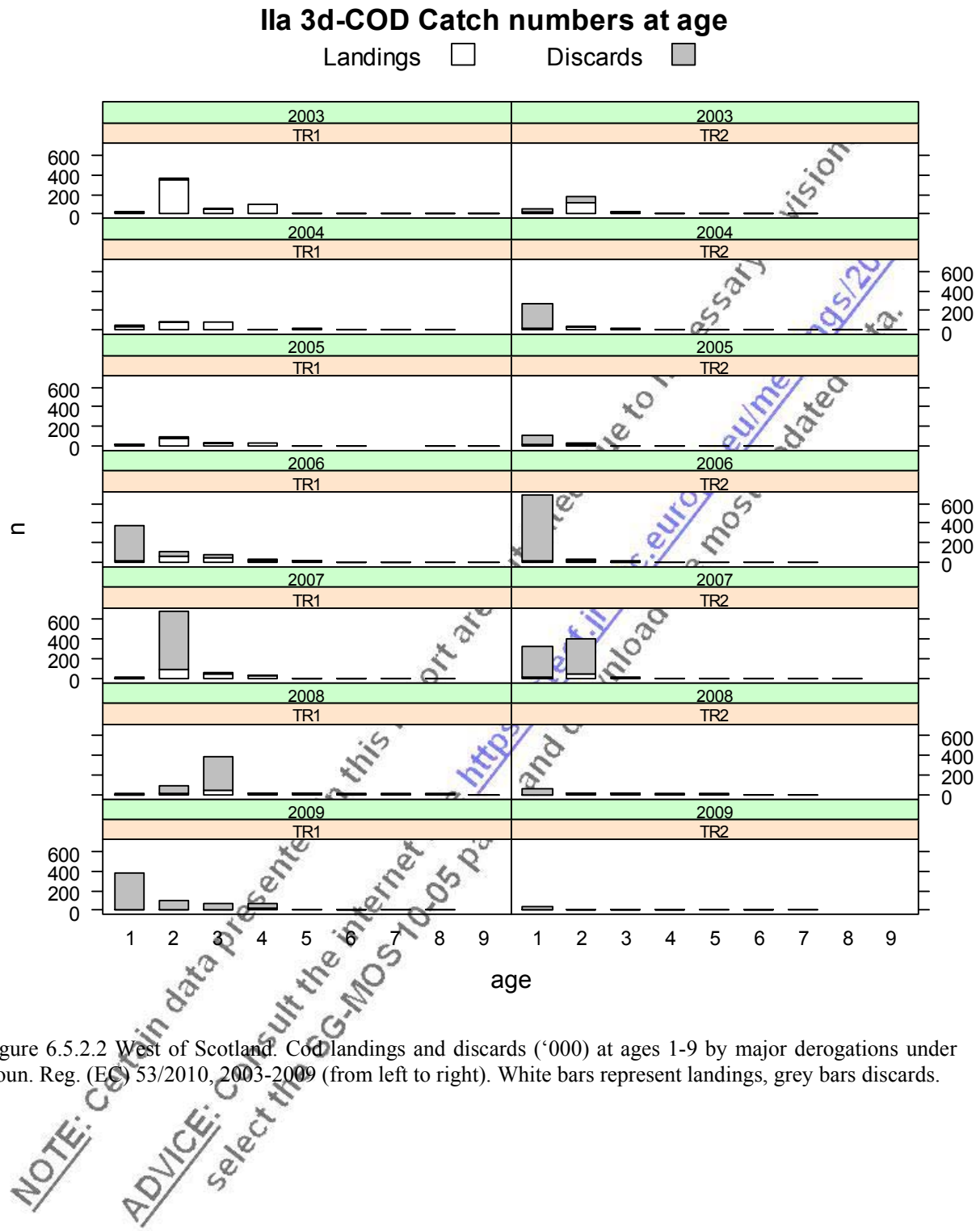


Figure 6.5.2.2 West of Scotland. Cod landings and discards ('000) at ages 1-9 by major derogations under Coun. Reg. (EC) 53/2010, 2003-2009 (from left to right). White bars represent landings, grey bars discards.

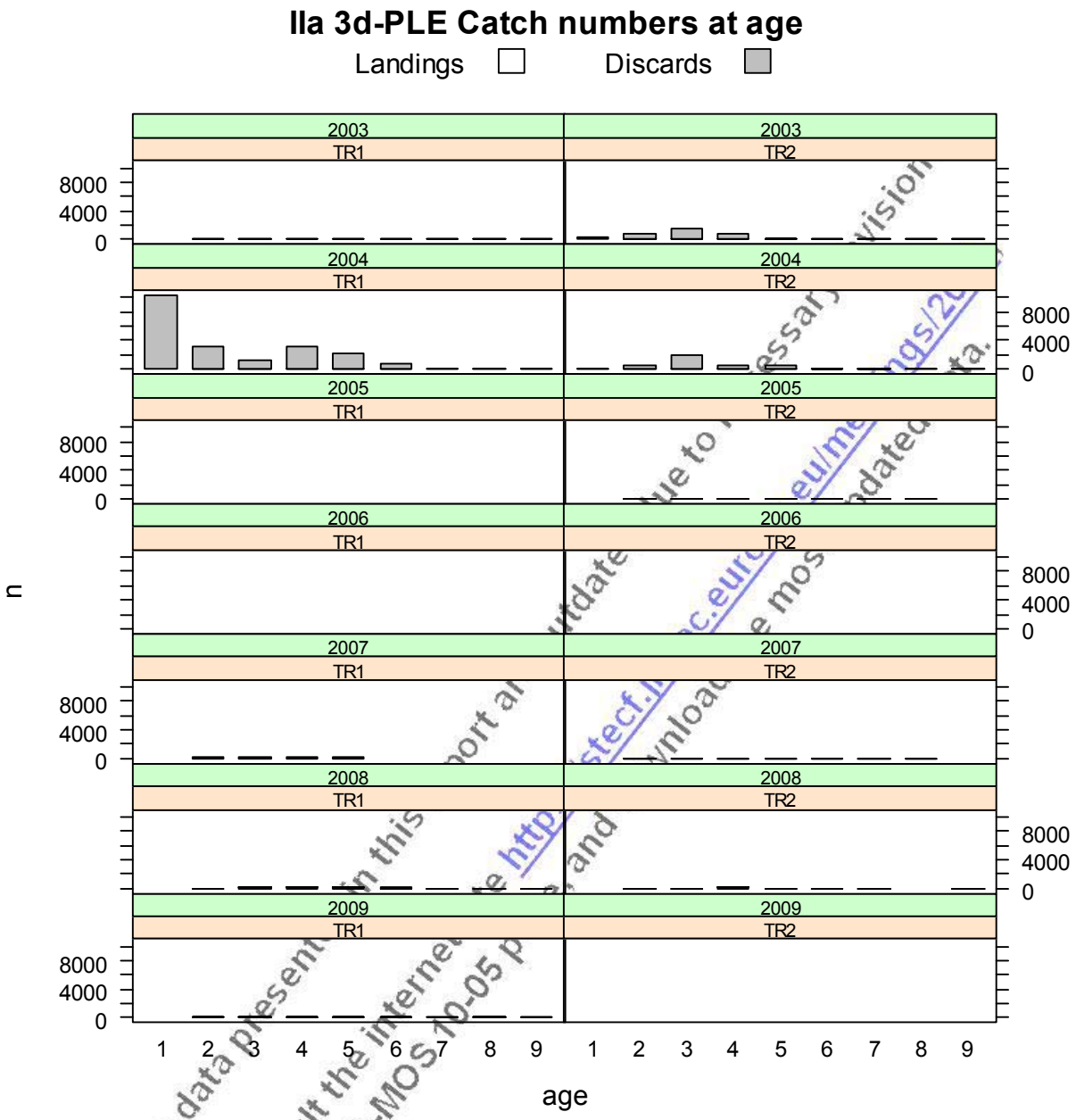


Figure 6.5.2.3 West of Scotland. Plaice landings and discards ('000) at ages 1-9 by major derogations under Coun. Reg. (EC) 53/2010, 2003-2009 (from left to right). White bars represent landings, grey bars discards.

6.5.3. Trend in CPUE of cod by derogation in management area 3d: West of Scotland

Section 6.5.2 shows how catch of plaice and sole are negligible in the west of Scotland waters and therefore this section only considers CPUE of cod. Table 6.5.3.1 shows cod catch per unit effort (CPUE), recorded in g/kWdays for all derogations within Coun. Reg (EC) 1342/2008 while table 6.5.3.2 shows landings per unit effort for the same derogations. Section 6.5.1 showed longlines to be the most significant gear category after trawl and seine gears west of Scotland but the tables show CPUE of cod for this gear type (LL1) to be low with no catch of cod recorded in 2008 or 2009.

Figures 6.5.3.1 to 6.5.3.2 show cod CPUE and LPUE respectively for the top four gear types under Coun. Reg (EC) 1342/2008, ranked in terms of average value over the years 2003-2009. It should be noted no

discard information is available for gill nets (GN1) such that results for this gear type are effectively LPUE in each figure. It is clear from Figure 6.5.3.1 that CPUE values have increased considerably for the TR1 gear type since 2005. ICES assessments have estimated the 2005 year class of cod to be the largest in the last decade and the pattern of CPUE is consistent with the catchability of fish in the 2005 year class increasing as the fish grow in size (and possibly redistribute from nursery areas). TACs for cod have declined over the same period and from Figure 6.5.3.2 it can be seen LPUE for the TR1 gears has remained flat. To illustrate the point further Figure 6.5.3.3 shows the ratio of CPUE to LPUE for cod for the gear types TR1 and TR2. Up to 2005 very few discards of cod were recorded for the TR1 gear resulting in a CPUE/LPUE value close to 1. Since then this ratio has increased so that in 2009 CPUE was over 4 times LPUE. Figure 6.5.2.2 suggests the increase in CPUE to be due to the 2005 year class of cod up to 2008 and because of a relatively strong 2008 year class in 2009. This result is consistent with results from the ICES division VIa cod assessment for 2010. In 2006 and 2007 CPUE was approximately 8 times LPUE and in 2009 the ratio was approximately 5:1 for the TR2 gear category but discards were recorded as very low in 2008. It is unclear whether the result reflects catches of juvenile cod from the 2005 year class in 2006 and 2007 or simply the uncertainty of discard observation data.

Table 6.5.3.1 West of Scotland. Cod CPUE (g/(kW*days)) by derogation in Coun. Reg. (EC) 53/2010 and year, 2003-2009.

SPECIES	REG AREA COD	REG GEAR COD	SPECON	CPUE 2003	CPUE 2004	CPUE 2005	CPUE 2006	CPUE 2007	CPUE 2008	CPUE 2009	CPUE 2007-2009
COD	3d	BT1	none	33	40	8	0	0	0	0	0
COD	3d	BT2	none	0				0	0	0	0
COD	3d	DEM_SEINE	none	0	0	0	0	0	0	0	0
COD	3d	DREDGE	none	0	0			0	0	0	0
COD	3d	GN1	none	5	2	18	104	79	10	3	20
COD	3d	LL1	none	18	8	8	17	7	0	0	3
COD	3d	OTTER	none	5	0	0	34	0	0	0	0
COD	3d	PEL_SEINE	none	16				0	0	0	0
COD	3d	PEL_TRAWL	none			0	0	0	0	0	0
COD	3d	POTS	none	0	0		0	0	0	0	0
COD	3d	TR1	CPart13	0	0	0	0	0	0	317	317
COD	3d	TR1	none	119	77	103	212	335	385	57	315
COD	3d	TR2	CPart13	0	0	0	0	0	0	12	12
COD	3d	TR2	none	41	24	14	47	86	10	5	46

Table 6.5.3.2 West of Scotland. Cod LPUE (g/(kW*days)) by derogation in Coun. Reg. (EC) 53/2010 and year, 2003-2009.

SPECIES	REG AREA COD	REG GEAR COD	SPECON	LPUE 2003	LPUE 2004	LPUE 2005	LPUE 2006	LPUE 2007	LPUE 2008	LPUE 2009	LPUE 2007-2009
COD	3d	BT1	none	33	40	8	0	0	0	0	0
		BT2	none	0				0	0	0	0
		DEM_SEINE	none	0	0	0	0	0	0	0	0
		DREDGE	none	0	0			0	0	0	0
		GN1	none	5	2	18	104	79	10	3	20
		LL1	none	18	8	8	17	7	0	0	3
		OTTER	none	5	0	0	34	0	0	0	0
		PEL_SEINE	none	16				0	0	0	0
		PEL_TRAWL	none			0	0	0	0	0	0
		POTS	none	0	0		0	0	0	0	0
		TR1	CPart13	0	0	0	0	0	0	44	44
			none	118	76	101	107	98	95	57	91
		TR2	CPart13	0	0	0	0	0	0	2	2
			none	34	13	8	6	11	8	5	9

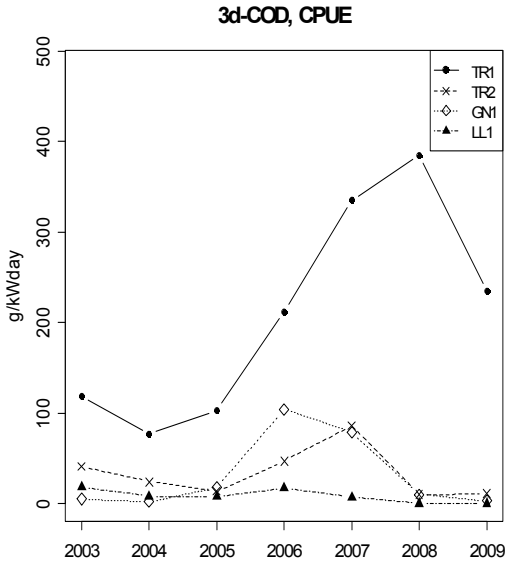


Figure 6.5.3.1 West of Scotland. Cod CPUE for the four gear categories with highest CPUE.

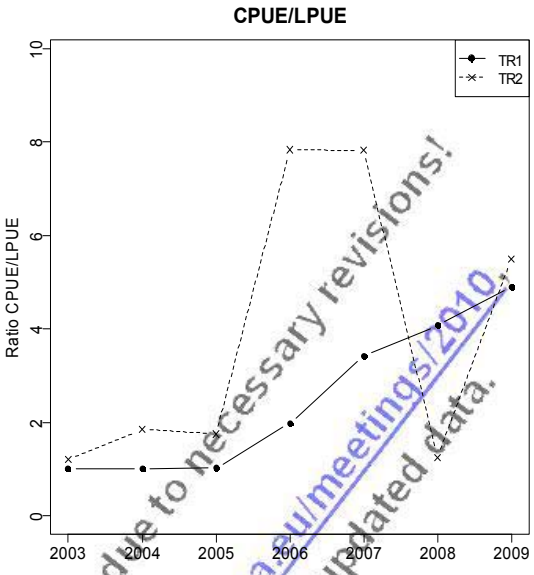


Figure 6.5.3.3 West of Scotland. Ratio of Cod CPUE to LPUE for the gear groups TR1 and TR2 under Coun. Reg. 1342/2008.

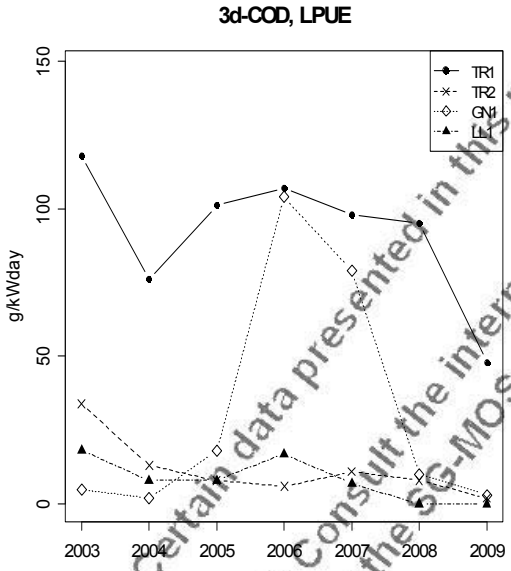


Figure 6.5.3.2 West of Scotland. Cod LPUE for the four gear categories with highest LPUE

6.5.4. Ranked derogations according to cod catches in management area 3d: West of Scotland

Tables 6.5.4.1 and 6.5.4.2 show, respectively, cod catch and cod landings (tonnes) by gear types as specified in Coun. Reg. (EC) 1342/2008, ranked according to their 2009 values. From these Tables the most important category in terms of cod catch and landings is TR1 with a three year average of 85% of the VIa cod total by weight. The second most important gear category is TR2, which from section 6.5.2 can be seen to be a gear category with Nephrops as the primary landed species. The ranking of these two gear types is consistent whether the 2009 values or a three year average is used but the contribution of TR2 gear to catch has noticeably declined in 2008 and 2009. In terms of catch the contribution of all other gear types is less than 1%, but for landings gill nets and long lines contribute 2% and 1% respectively.

Table 6.5.4.1 West of Scotland. Gear derogations (Coun. Reg. 53/2010) ranked according to relative cod catch in tonnes, 2003-2009. Ranking is according to the year 2009.

SPECIES	REG_GEAR	2003 Rel	2004 Rel	2005 Rel	2006 Rel	2007 Rel	2008 Rel	2009 Rel	Mean 07-09
COD	TR1	0.74	0.71	0.8	0.69	0.66	0.95	0.93	0.85
COD	TR2	0.25	0.27	0.17	0.28	0.32	0.05	0.07	0.15
COD	LL1	0.01	0.01	0.01	0.01	0.01	0	0	0.00
COD	POTS	0	0		0		0	0	0.00
COD	OTTER	0	0	0	0.01	0	0	0	0.00
COD	GN1	0	0	0.01	0.01	0.01	0	0	0.00
COD	BT1	0	0.01	0	0				
COD	PEL_TRAWL			0	0	0	0		0.00
COD	DREDGE	0	0						
COD	DEM_SEINE	0							
COD	BT2	0							
COD	PEL_SEINE	0							

Table 6.5.4.2 West of Scotland. Gear derogations (Coun. Reg. 53/2010) ranked according to relative cod landings in tonnes, 2003-2009. Ranking is according to the year 2009.

SPECIES	REG_GEAR	2003 Rel	2004 Rel	2005 Rel	2006 Rel	2007 Rel	2008 Rel	2009 Rel	Mean 07-09
COD	TR1	0.77	0.8	0.86	0.84	0.78	0.84	0.93	0.85
COD	TR2	0.21	0.17	0.11	0.09	0.16	0.14	0.07	0.12
COD	GN1	0.01	0	0.01	0.02	0.04	0.02	0.01	0.02
COD	LL1	0.01	0.01	0.01	0.04	0.02	0	0	0.01
COD	POTS	0	0		0		0	0	0.00
COD	OTTER	0	0	0	0.03	0	0	0	0.00
COD	PEL_TRAWL			0	0	0	0		0.00
COD	DREDGE	0	0						
COD	DEM_SEINE	0							
COD	BT2	0							
COD	BT1	0	0.01	0	0				
COD	PEL_SEINE	0							

6.5.5. Unregulated gear in management area 3d: West of Scotland

Category 'none' represents unregulated gear types and mesh sizes in addition to unidentified mesh sizes. This section provides a break down of the main gears within this category in terms of effort (kW*Days at sea) and cod, plaice and sole catches.

'None' effort is a high proportion of overall effort West of Scotland, accounting for between 50 and 63% of overall effort in the years 2003-2009. Significant categories are pelagic trawls, dredges and pots. Effort using pelagic trawl gear rose to a peak in 2004 but has since declined, falling to the lowest effort recorded in 2008 and then again in 2009. Effort by dredge gears has declined to roughly one half of the peak effort in 2002; effort using pots has increased since 2000, although the value in 2008 reduced from a high in 2007 and has fallen again in 2009.

Tables 6.5.5.2 to 6.5.5.4 show catches of cod, plaice and sole by gear sub-category. It can be seen that insignificant amounts of these species are caught within the 'none' category.

Table. 6.5.5.1. West of Scotland. Unregulated gear according to Coun. Reg. (EC) 53/2010 effort (kW*Days) by gear type, 2000-2009.

REG AREA COD	REG GEAR COD	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
3d	BEAM	10523	12528			10136					
	DEM_SEINE	75298	24711	31916	644						
	DREDGE	1981727	2037696	2245875	1956374	1684266	1510557	1161672	911530	1075527	1071327
	none	50876	57096	59694	52102	26858	42249	50920	63504	68847	99379
	OTTER	2016559	1812345	1492506	188543	659745	654988	290705	41340	151384	171586
	PEL_SEINE	609134	492967	358793	246284	266254	157776	186486	113645		
	PEL_TRAWL	9621572	10520119	12380407	11623490	16964260	13149499	11060133	9890496	8636882	7459471
	POTS	2188417	2546277	2497117	2637737	2664107	2762361	2725839	3429787	2906422	2884610
Unregulated gears total		16554106	17503739	19066308	16705174	22275626	18277430	15475755	14450302	12839062	11686373

Table. 6.5.5.2. West of Scotland. Unregulated gear according to Coun. Reg. (EC) 53/2010 cod catch (tonnes) by gear type, 2003-2009.

SPECIES	REG_GEAR	2003 L	2003 D	2004 L	2004 D	2005 L	2005 D	2006 L	2006 D	2007 L	2007 D	2008 L	2008 D	2009 L	2009 D
COD	DEM_SEINE														
COD	DREDGE				1										
COD	OTTER		1		1				10						
COD	PEL_SEINE		4												
COD	PEL_TRAWL						1				1		1		
COD	POTS														
Unregulated gears total			5		2		1		10		1		1		

Table. 6.5.5.3. West of Scotland. Unregulated gear according to Coun. Reg. (EC) 53/2010 plaice catch (tonnes) by gear type, 2003-2009.

SPECIES	REG_GEAR	2003 L	2003 D	2004 L	2004 D	2005 L	2005 D	2006 L	2006 D	2007 L	2007 D	2008 L	2008 D	2009 L	2009 D
PLE	BEAM				4										
PLE	DEM_SEINE														
PLE	DREDGE														
PLE	OTTER		2		3										
PLE	PEL_TRAWL		1		4		1				1		1		
PLE	POTS				1										
Unregulated gears total			3		12		1				1		1		

Table. 6.5.5.4. West of Scotland. Unregulated gear according to Coun. Reg. (EC) 53/2010 sole catch (tonnes) by gear type, 2003-2009.

SPECIES	REG_GEAR	2003 L	2003 D	2004 L	2004 D	2005 L	2005 D	2006 L	2006 D	2007 L	2007 D	2008 L	2008 D	2009 L	2009 D
SOL	BEAM				1										
SOL	DEM_SEINE														
SOL	DREDGE														
SOL	none												1		
SOL	OTTER		1		1										
SOL	PEL_TRAWL				1		2				6		2		
SOL	POTS														
Unregulated gears total			1		3		2				6		3		

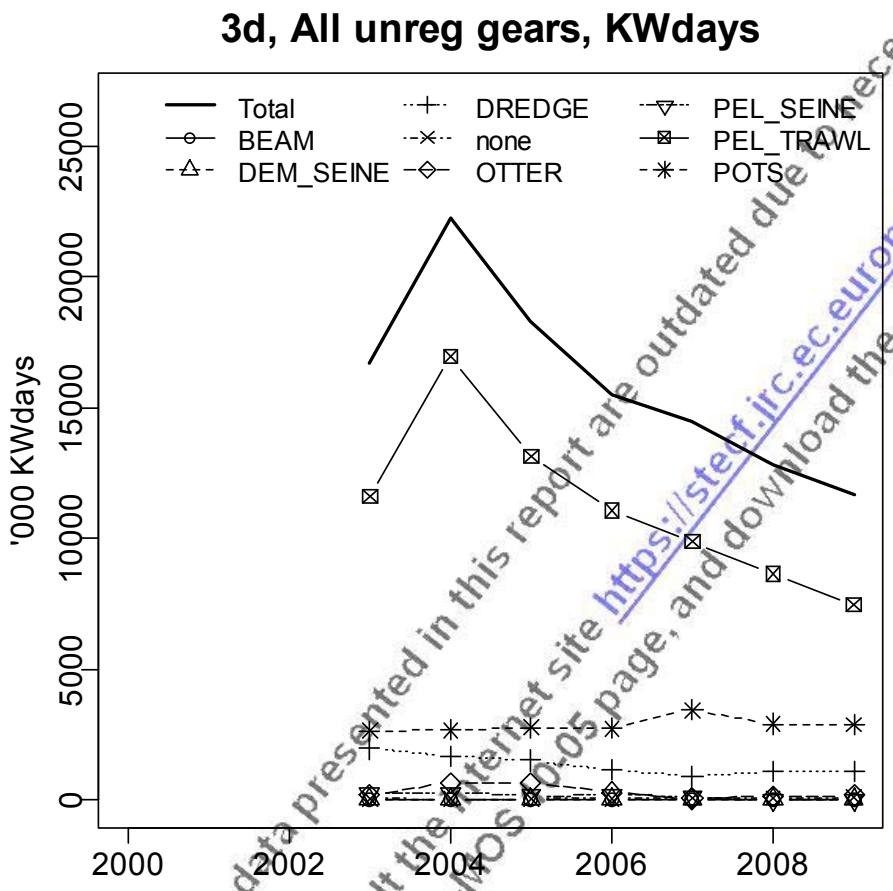


Figure 6.5.5.1 West of Scotland. Unregulated gear according to Coun. Reg. (EC) 1342/2008 (category none) effort (kW*Days) by gear type, 2000-2009.

6.5.6. Vessels <10m in management area 3d: West of Scotland

Activity by vessels <10m in area 3d (west of Scotland) was recorded by Ireland, IOM, UK(EWNI) and UK(Scotland). Descriptions of the type and quality of data available for assessing effort and landings of these vessels can be found in section 5. Only Ireland, UK(EWNI) and UK(Scotland) recorded effort and landings in area 3d West of Scotland.

For UK (Scotland) effort data in kW*days it was not possible to provide a reliable estimate for 2009. Landings data could be compiled in the same way as for vessels greater than 10m in length. The results for area 3d (west of Scotland) are shown in Tables 6.5.6.1. and 6.5.6.2. Overall effort increased between 2000

and 2006 due to increasing effort using pots. From Table 6.5.5.2 however, it can be seen landings of cod, plaice and sole are low in all years from 2003. Between 2006 and 2008 over 2000 tonnes of *Nephrops* were landed with pots (taking slightly more than otter trawls). In 2009 landings of Nephrops by POTS has stayed much the same but those from otter trawls fell to a third of their previous value. POTS are an important gear for catching edible crabs (CRE). Scallops (SCE) are also a significant species for boats <10m (although the gear classifications with respect to this species should be treated with caution).

Table 6.5.6.1 West of Scotland. Effort (kW*days) of Scottish vessels under 10 metres by gear type, 2000-2008

Sum of NOMINAL_EFFORT	YEAR								
GEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008
DREDGE	32327	56463	44475	83679	104657	67282	22775	32032	57077
GILL	101	456	42			56	468	1800	5889
LONGLINE	142	1692		25	160		271	241	1648
none	429123	320254	87647	106902	127779	122184	162708	122237	111440
OTTER			250	2307	1179	493		128	378
PEL_TRAWL					475				
POTS	1605355	1828112	2247569	2668812	2668821	3039429	3638455	3571083	3143786
TRAMMEL								368	
Grand Total	2067048	2206977	2379983	2861725	2903071	3229444	3824677	3727884	3320218

Table 6.5.6.2 West of Scotland. Landings (tonnes) of cod, plaice and sole, plus anglerfish, edible crab, haddock, hake, mackerel, *Nephrops,* saithe, scallops and whiting by Scottish vessels under 10 m by gear type, 2003-2009.

SPECIES	REG GEAR	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ANF	none				0.050						
	POTS				5.158	7.073	0.230				0.493
	TR2				2.936	4.163	1.045	3.596	0.713	0.333	
ANF Total					8.144	11.236	1.275	3.596	0.713	0.333	0.493
COD	GN1									0.103	
	POTS				0.699	0.193			0.540		0.518
	TR2				2.136	0.868	0.375	0.768	1.627	0.646	0.035
COD Total					2.835	1.061	0.375	0.768	2.167	0.749	0.553
CRE	DREDGE				0.515		1.125			0.181	4.011
	GN1							0.020	0.861	0.443	
	LL1							0.012			1.031
	none				0.232	1.279	1.043	1.053	1.650		110.079
	OTTER										2.103
	POTS				785.962	820.751	1016.931	1764.196	2674.749	1549.599	2055.099
	TR1										1.794
	TR2				0.154		0.236	2.132	6.273	4.542	334.618
CRE Total					786.863	822.030	1019.335	1767.413	2683.533	1554.764	2508.735
HAD	DREDGE							0.058			0.033
	none				0.145						
	POTS				20.156	5.489	0.110		0.050		7.574
	TR2				4.289	6.529	1.966	2.754	0.898	0.626	0.059
HAD Total					24.591	12.018	2.076	2.812	0.948	0.626	7.665
HKE	POTS				0.414	0.108				0.024	0.088
	TR2				0.178	0.629	0.389	0.401		0.454	0.035
HKE Total					0.591	0.737	0.389	0.401		0.478	0.123
MAC	DREDGE										1.301
	LL1				0.360			0.255	1.344	0.943	
	none						0.180	0.007	0.325	0.001	9.330
	POTS				0.084	0.348		0.126	0.795	0.660	142.131
	TR1										0.120
	TR2										16.530
MAC Total					0.444	0.348	0.180	0.387	2.464	1.603	169.411
NEP	DREDGE				0.016	2.365	0.016	0.941	0.028	0.054	24.840
	GN1								0.083		
	LL1									0.155	2.688
	none				5.745	0.494			0.324	0.088	26.300
	OTTER										0.661
	PEL_TRAWL					0.319					
	POTS				1200.887	1186.975	1176.983	1259.585	1249.228	1116.212	1153.476
	TR1										1.503
	TR2				612.808	593.181	576.280	1040.556	1088.092	1064.123	348.293
NEP Total					1819.456	1783.334	1753.279	2301.082	2337.755	2180.632	1557.759
PLE	POTS				0.012						24.417
	TR2				0.047	0.050	0.054	0.508	0.071	0.075	
PLE Total					0.058	0.050	0.054	0.508	0.071	0.075	24.417
POK	POTS										4.010
	TR2					0.012	0.060				4.723
POK Total						0.012	0.060				8.733
SCE	DREDGE				266.137	265.992	154.619	41.522	21.268	709.534	2.970
	LL1							0.017	0.033	0.103	
	none				301.393	203.088	174.079	223.728	206.683	228.328	6.273
	OTTER										1.808
	POTS				0.185	13.877	5.918	0.247	3.136	8.095	282.018
	TR2					0.180					108.720
SCE Total					567.715	483.137	334.616	265.513	231.119	946.060	401.790
SOL	POTS					0.001					
	TR2						0.033				
SOL Total						0.001	0.033				
WHG	none				0.057						
	POTS				13.721	3.790	0.024			0.061	0.306
	TR2				0.536	2.232	2.033	0.811	0.034	0.834	
WHG Total					14.314	6.022	2.057	0.811	0.034	0.895	0.306

Ireland

Irish under 10 meter vessel landings are not recorded by gear type. Therefore Table 6.7.5.3 represents landings by all gears types used by these vessels in the west of Scotland. This information is known to be incomplete, however. No area specific vessel numbers or effort is available from Ireland, for further description of information available from Ireland, see Section 5.

Table 6.5.6.3. West of Scotland; landings (tonnes) of all species recorded by Irish under 10 meter vessels, 2003-2009.

COUNTRY	SPECIES	REG GEAR	2003	2004	2005	2006	2007	2008	2009
IRL	ANF	none		0.22				0.16	
	COD	none	0.02	0.35					
	COE	none	0.38	0.38	0.28	0.48			
	CRE	none	2218.29	3527.92	2458.95	2025.8	618	725.87	
	HAD	none		0.98				0.06	
	HKE	none		0.29				0.17	
	NEP	none						2.34	
	PLE	none	0.4	0.69				1.85	
	POK	none	6.25	0.75					
	RAJ	none	2.62	13.29	20.5	17.92	7.72	8.42	
	RJG	none	5.01						
	SCR	none					5	0.5	
	SOL	none		0.27				1.87	
	WHG	none	0.36	1.12				0.06	

UK England, Wales and Northern Ireland – UK(EWNI)

As can be seen from Tables 6.5.6.4 and 6.5.6.5 virtually no landings of cod, and plaice and no landings of sole are recorded as taken by UK(EWNI) vessels west of Scotland. For a description of data available on vessels under 10m length from UK (EWNI) see Section 5.

Table 6.5.6.4. West of Scotland; estimated landings (tonnes) of all species recorded by UK(EWNI) vessels under 10m, 2003-2009.

COUNTRY	SPECIES	REG GEAR	2003	2004	2005	2006	2007	2008	2009
ENG	ANF	TR2	0.061		0.001				
	COD	TR2			0.001				
	CRE	POTS	0.311				166.765	0.062	3.12
		TR2			0.122				
	HAD	TR2	0.174						
	NEP	OTTER				0.623			0.036
		POTS	3.491		2.777	1.601	1.683	1.608	7.796
		TR2	13.756	4.102	11.893	7.398	27.935	34.432	7.306
	PLE	TR2			0.002				
	SCE	DREDGE	2.918			2.473			
		POTS				0.078			

Table 6.5.6.5. West of Scotland; estimated landings (tonnes) of all species recorded by UK(EWNI) vessels under 10m, 2003-2009.

COUNTRY	SPECIES	REG GEAR	2003	2004	2005	2006	2007	2008	2009
NIR	ANF	TR2	0.013	0.023		0.312	0.09	0.014	
	COD	TR2			0.053	0.012	0.018	0.011	
	COE	TR2				0.009	0.022		
	CRE	POTS	0.042	1.892		53.501	152.251	179.572	1.575
		TR2				0.02			
	HAD	TR2	0.064	0.067		0.019	0.025	0.026	
	HKE	TR2	0.015	0.008		0.122	0.011	0.001	
	NEP	POTS	0.998		1.044			0.037	0.198
		TR2	18.739	16.057	2.093	22.095	14.694	12.698	4.885
	PLE	TR2			0.048				
	POK	TR2			0.053				
	SCE	DREDGE	0.281		31.75	36.275	27.75	25.55	45.88
		none			0.4				0.04
		POTS						0.047	
	SCR	POTS				0.234	1.23		
	SOL	TR2				0.128	0.024	0.006	
	WHG	TR2			1.08				

Overall landings by under 10m in AREA 3d West of Scotland

Table 6.5.6.6 summarises landings by vessels under 10m west of Scotland in 2009. The only significant landings are those of edible crabs (CRE), *Nephrops* (NEP) and scallops (SCE) with the majority being taken by Scottish vessels. Much of the Nephrops and crab catch comes from the creel fishery operating on the west coast while scallops are caught by dredges.

Table 6.5.6.6 West of Scotland. Landings (tonnes) by vessels under 10 meters in 2009.

REG AREA	SPECIES	ENG	IOM	IRL	NIR	SCO	Total
3d	ANF					0.4925	0.4925
	BSF					0.1334	0.1334
	COD					0.5531	0.5531
	COE					0.032	0.032
	CRE	3.12			1.575	2508.735	2513.430108
	HAD					7.6647	7.6647
	HKE					0.1226	0.1226
	MAC					169.411	169.411
	NEP	15.138			5.083	1557.759	1577.9799
	PEN					2.7836	2.7836
	PLE					24.4174	24.4174
	POK					8.7325	8.7325
	RAJ						
	RJG						
	SCE				45.92	401.7899	447.7099
	SCR					3.3388	3.3388
	SOL						
	WHG					0.3059	0.3059
3d Total		18.258			52.578	4686.271	4757.107408

6.5.7. Significance of Unregulated Gears and Vessels <10m in management area 3d/2d: West of Scotland

Section 6.5.5 showed that the majority of unregulated effort by vessels > 10m involved use of dredges or deployment of pots as well as the pelagic sector. The section also showed how the unregulated gears landed very small quantities of cod, plaice and sole. Although it must be borne in mind that information is not available about discards from these gears it is probable their significance in terms of catch of cod, plaice and sole is low.

Section 6.5.6 outlined available information on landings by vessels < 10m west of Scotland. Again recorded landings of cod, plaice and sole are very low and the same conclusion of low significance in terms of catch of cod, plaice and sole applies. Edible crabs, *Nephrops* and scallops were found to be the only species landed in any significant quantity. Much of the Nephrops and crab catch comes from the creel fishery operating on the west coast while scallops are caught by dredges.

Table 6.5.7.1 West of Scotland. Landings (tonnes) of cod, plaice and sole in 2009 by vessels < 10m and by unregulated gears compared to overall landings recorded in the area.

	Cod	Plaice	Sole
Total landings in area	167	43	4
Total landings from vessels < 10m	0.6	24	0
Total landings (unregulated)	0	0	0

6.5.8. Spatial Distribution of Effective Effort in management area 3d: West of Scotland

Spatial figures of effort for area 3d concentrate on those categories identified as significant in terms of recorded effort (see section 6.5.1) and in terms of catches of cod (section 6.5.2). From section 6.5.2 catches of plaice and sole are shown to be small for all categories in the west of Scotland area and these species were not considered when deciding on categories to present here. Figures use a common scale across years for a given category (e.g. TR1) but scales are unique to each category such that the colours assigned to statistical rectangles for category TR1 can not be compared directly to those assigned for category TR2 say. Figures use a percentiles scale, i.e. the same number of data values found in each colour band is the same. This is after data values across all years have been combined for that category.

TR1 (Figure 6.5.8.1) – For the most part effort is restricted to continental shelf waters ≤ 200 m in depth. In 2003, with the exception of waters around the north coast of Ireland and just to the west of the Hebrides effort on the continental shelf was relatively uniform. A contraction of effort between 2003 and 2009 is clear. ICES statistical rectangles in the highest effort category have reduced, especially in the area south of 57N. To the north high effort rectangles are now mostly those that straddle the edge of the continental shelf. For the Scottish fleet this reflects a change in emphasis from cod and haddock to anglerfish and megrim.

TR2 (Figure 6.5.8.2) – It can be seen that vessels using gear in the TR2 category primarily belong to coastal fisheries. Highest values of effort are in rectangles adjacent to the Scottish mainland from the northern end of the area between the Scottish mainland and the Outer Hebrides (known as the north and south Minches) as far as the boundary between management areas 3d and 3c. The time series shows a contraction of effort in towards these areas of greatest activity.

LL1 (Figure 6.5.8.3) – There is a concentration of effort along the continental shelf edge consistent with time. There have also been rectangles of high effort in the south Minch area and outside the Clyde estuary to the north of the 3d, 3c management area border in some years although not in 2008 or 2009.

GN1 (Figure 6.5.8.4) – Overall effort recorded for this category is low but LPUE of cod is currently the highest behind category TR1. Until 2005 effort generally took place offshore and was split between an area to the north west of ICES division VIa and an area to the south west of Ireland. Subsequently effort shifted until in 2008 there appeared to be a new concentration of effort in the north of area VIa but now located on the continental shelf. In 2009 gill net effort is recorded for very few rectangles although table 6.5.1.3 of section 6.5.1 showed overall gillnet effort to be comparable between 2008 and 2009.

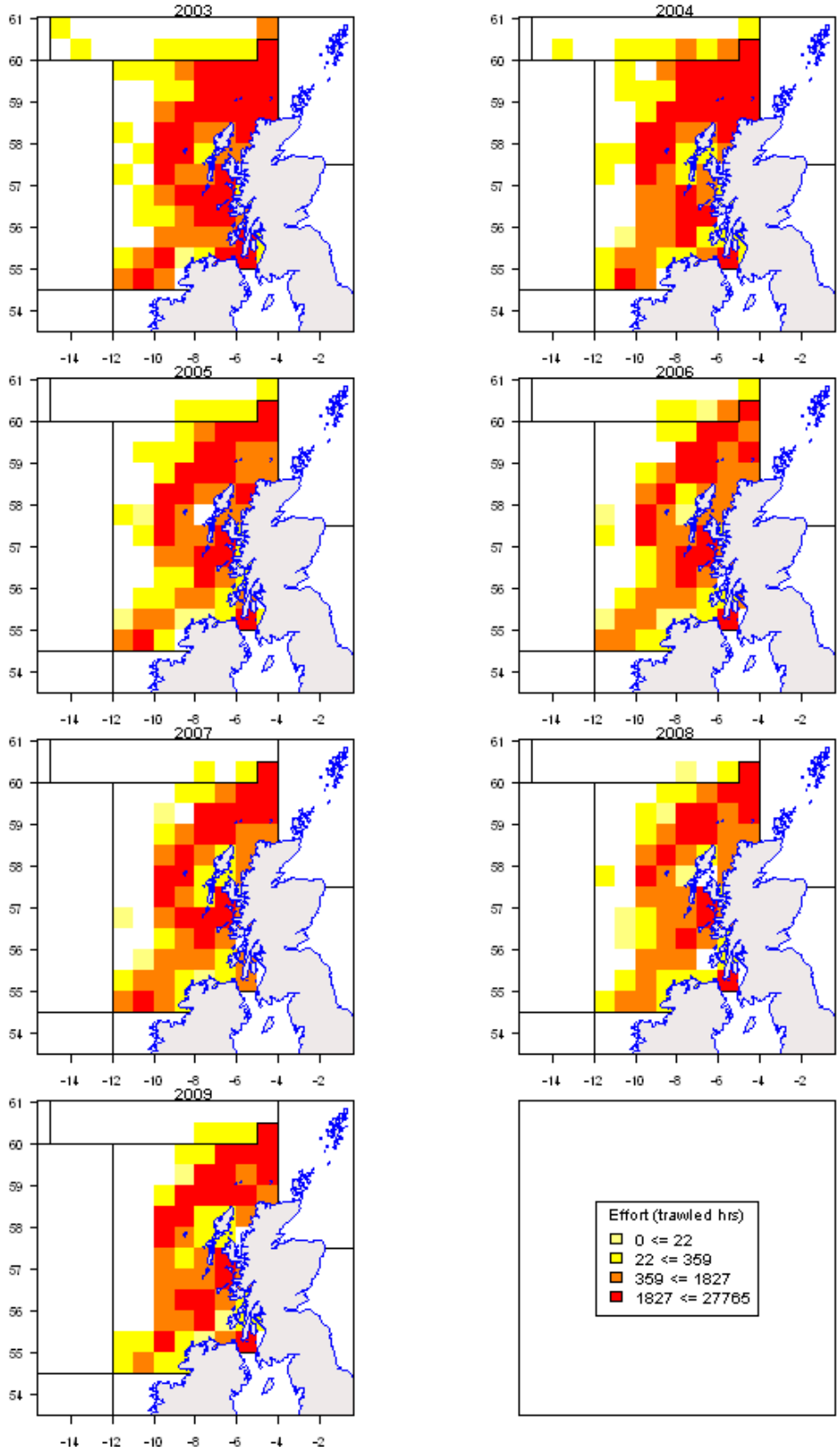


Figure 6.5.8.1 West of Scotland. Effort (trawled hours) by ICES statistical rectangle for TR1, 2003-2009.

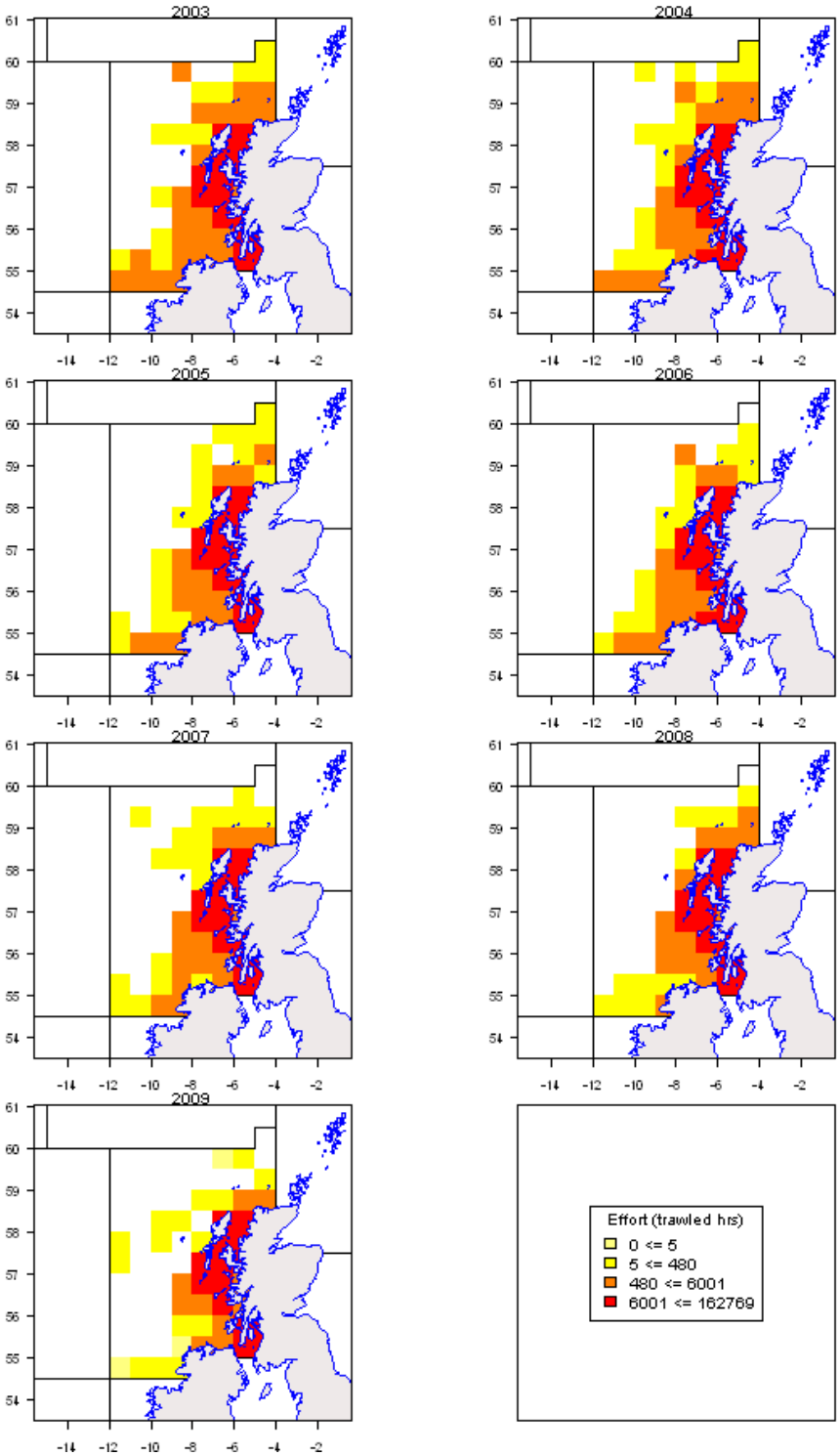


Figure 6.5.8.2 West of Scotland. Effort (trawled hours) by ICES statistical rectangle for TR2, 2003-2009.

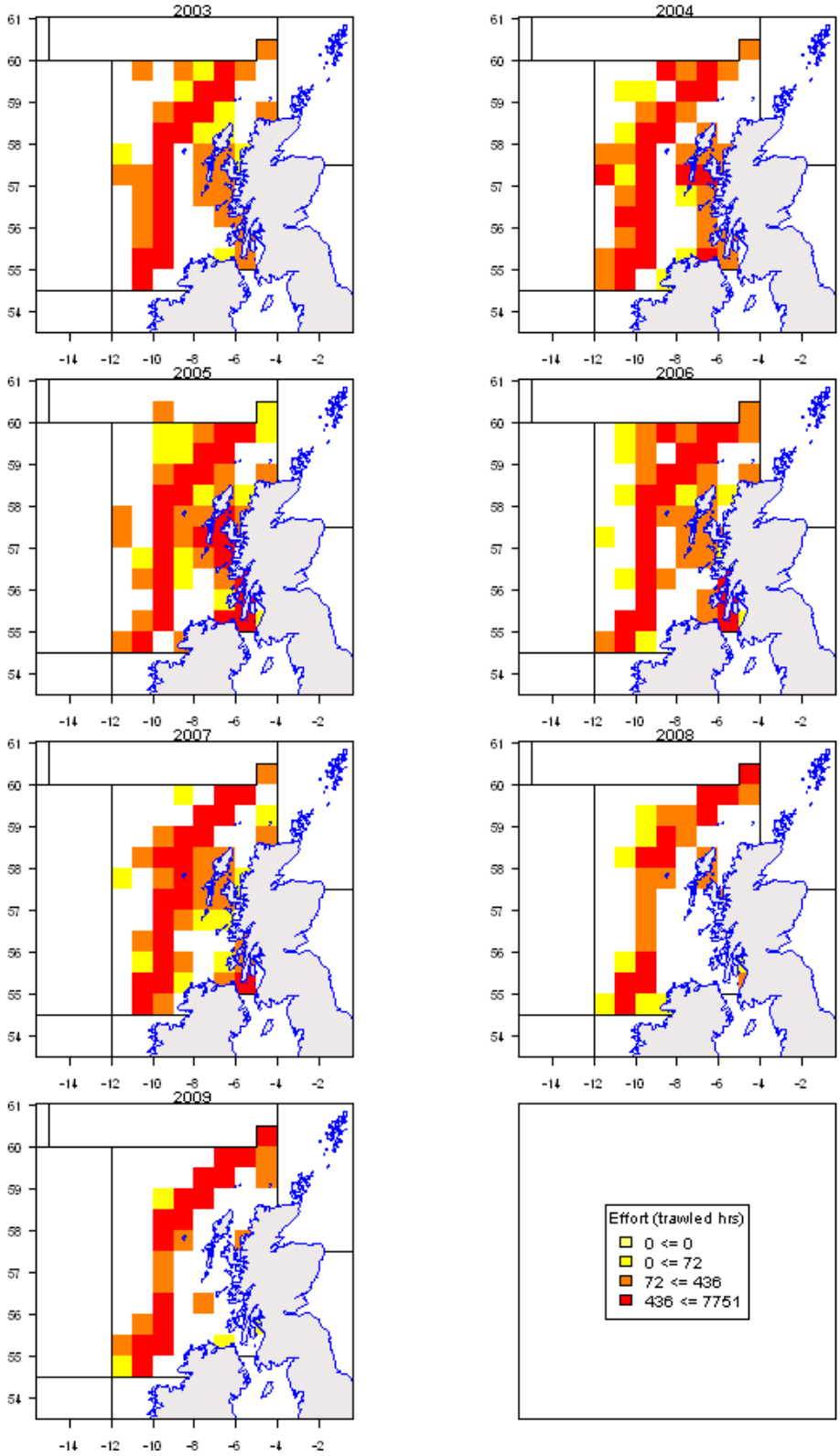


Figure 6.5.8.3 West of Scotland. Effort (hours) by ICES statistical rectangle for LL1, 2003-2009.

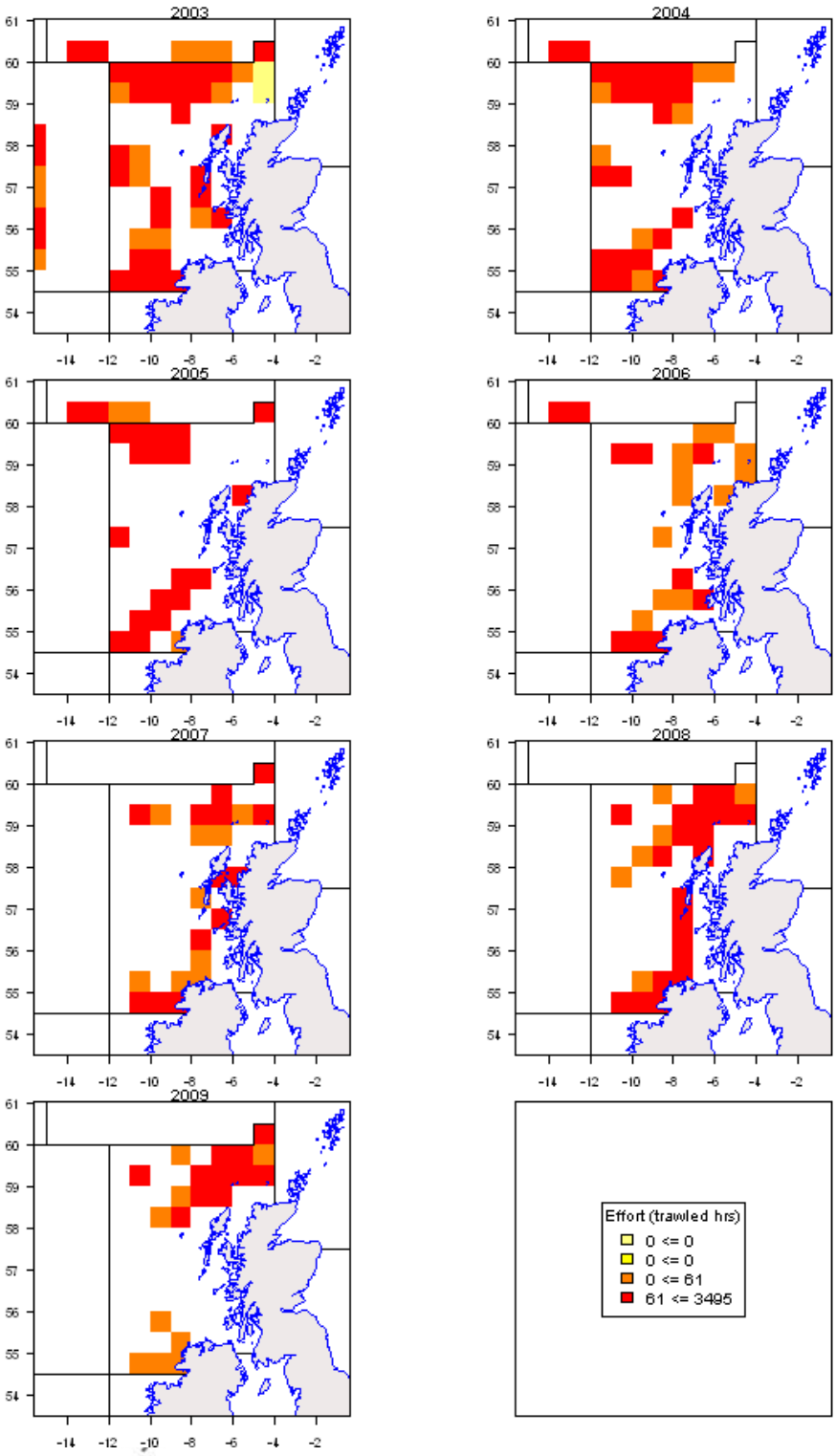


Figure 6.5.8.4 West of Scotland. Effort (hours) by ICES statistical rectangle for GN1, 2003-2009.

6.5.9. Specific request for management area 3d: West of Scotland

It is requested to provide effort, landings and discards information for the categories listed under the following sub-headings. All categories relate to Annex III, paragraphs 6.5 and 6.6 of Reg (EC) 43/2009.

The data call does not require member states to distinguish between effort and catches using gears with square mesh panels (SMP) and sorting grids and those without and there is nothing within the data submission file specification to allow this distinction.

Vessels fishing with mesh 110mm or 120mm are required to use the SMP referred to under sections 6.5.9.1 and 6.5.9.2 if fishing inside the cod recovery zone. Vessels over 15m fishing outside the cod recovery zone may fish without SMP as referred to under section 6.5.9.3. Data submitted to this sub-group does not distinguish effort and catches inside or outside the cod recovery area. It is therefore not possible with the data supplied to disaggregate effort, landings and discard data according to the categories listed under sections 6.5.9.1 to 6.5.9.3.

Because it is known vessels west of Scotland using 80mm gear do not use the sorting grid of section 6.5.9.4, sections 6.5.9.4 and 6.5.9.5 can be addressed.

6.5.9.1. Vessels under 15m, fishing with min. 110mm gear and with SMP as in Appendix 5 to Annex III

It is not possible to present effort, landings and discards expended by this gear type (see introduction to section 6.5.9).

6.5.9.2. Vessels ≥ 15m, fishing with min. 120mm gear and with SMP as in Appendix 5 to Annex III

It is not possible to present effort, landings and discards expended by this gear type (see introduction to section 6.5.9).

6.5.9.3. Vessels ≥ 15m, fishing with min. 120mm gear and without SMP

It is not possible to present effort, landings and discards expended by this gear type (see introduction to section 6.5.9).

6.5.9.4. Vessels with min. 80mm gear and with a sorting grid as in Appendix 2 to Annex III

Vessels using 80mm mesh gear and a sorting grid as in Appendix 2 to Annex III are vessels targeting Nephrops. It is known that no Scottish or Irish vessels fishing west of Scotland use this sorting grid. Apart from Scotland and Ireland, nations recorded as fishing with gear with mesh between 80mm-100mm are UK(EW), UK(NIR) and France. It is believed no vessels from these countries use the sorting grid west of Scotland.

6.5.9.5. Vessels with min. 80mm gear and with SMP as in Appendix 5 to Annex III

Vessels using 80mm mesh gear and a SMP as in Appendix 5 to Annex III are vessels targeting Nephrops. Vessels targeting Nephrops must either use this gear or gear listed under section 6.5.9.4. The requirement to use the SMP as specified under Appendix 5 was only introduced in 2009 and it is not possible to compare effort and catches using this gear type with previous years. All Scottish vessels fishing west of Scotland with mesh 80mm are targeting Nephrops and therefore it is known all such vessels fish according to this category. Apart from Scotland nations recorded as fishing with gear with mesh between 80mm-100mm are Ireland, UK(EW), UK(NIR) and France. Figure 6.5.9.1 shows the landings composition of each nation. It is not known what proportion of effort by the vessels of these nations are targeting Nephrops but Figure 6.5.9.1

suggests the English and Northern Irish fleets are also all targeting Nephrops. Data for Irish boats records a mixture of landed species while French data records landings of saithe only. For these two nations Table 6.5.9.2 shows landings of all species to be small.

Table 6.5.9.1 West of Scotland. Effort (kW*days) by country, vessel length, mesh size range and special condition of vessels using mesh between 80mm-100mm. Scottish effort is all targeted at Nephrops. The proportion of effort inside the cod recovery zone is not known for other nations.

SPECON	REG GEAR COD	VESSEL_LENGTH	Mesh size cod	COUNTRY	Total
CPart13	TR2	o10t15m	80-89	SCO	1197581
			90-99	SCO	65172
		o15m	80-89	SCO	1911328
			90-99	SCO	961960
CPart13 Total					4136041
none	TR2	o10t15m	80-89	ENG	1821
				FRA	
				IRL	400
				NIR	56471
				SCO	
			90-99	ENG	7600
				IRL	
				SCO	
		o15m	80-89	ENG	
				FRA	4558
				IOM	
				IRL	16707
				NIR	406791
				SCO	
			90-99	ENG	6300
				IOM	
				IRL	
				NIR	6867
				SCO	
none Total					507515
Grand Total					4643556

Table 6.5.9.2 West of Scotland. Landings and discards (tonnes) by country, vessel length and mesh size range of vessels using mesh between 80mm-100mm. Scottish effort is all targeted at Nephrops within the cod recovery zone. The proportion of effort and catches inside the cod recovery zone is not known for other nations. Note that discard data are only available for some species (COD, HAD, POK and WHG) and member states. The lack of discard information for a given species in this table represents no information rather than zero discards

SPECIES	GEAR	VESSEL_LENGTH	MESH_SIZE_RANGE	COUNTRY	LANDINGS	DISCARDS
ANF	OTTER	o10t15m	80-89	NIR	0.115	
ANF	OTTER	o10t15m		SCO	1.129	
ANF	OTTER	o10t15m	90-99	ENG	0.166	
ANF	OTTER	o10t15m		SCO	0.044	
ANF	OTTER	o10t15m Total			1.453	
ANF	OTTER	o15m	80-89	IRL	16.690	
ANF	OTTER	o15m		NIR	0.358	
ANF	OTTER	o15m		SCO	43.505	
ANF	OTTER	o15m	90-99	ENG	0.224	
ANF	OTTER	o15m		NIR	0.156	
ANF	OTTER	o15m		SCO	21.741	
ANF	OTTER	o15m Total			82.674	
ANF Total					84.127	
COD	OTTER	o10t15m	80-89	NIR	0.119	
COD	OTTER	o10t15m		SCO	0.398	2.511
COD	OTTER	o10t15m	90-99	ENG	0.059	
COD	OTTER	o10t15m Total			0.576	2.511
COD	OTTER	o15m	80-89	IRL	2.452	
COD	OTTER	o15m		NIR	0.403	
COD	OTTER	o15m		SCO	5.108	32.226
COD	OTTER	o15m	90-99	ENG	0.249	
COD	OTTER	o15m		NIR	0.094	
COD	OTTER	o15m		SCO	1.877	11.842
COD	OTTER	o15m Total			10.182	44.068
COD Total					10.758	46.579
COE	OTTER	o15m	80-89	NIR	0.006	
COE	OTTER	o15m		SCO	0.412	
COE	OTTER	o15m Total			0.418	
COE Total					0.418	
CRE	OTTER	o10t15m	80-89	SCO	0.010	
CRE	OTTER	o10t15m Total			0.010	
CRE	OTTER	o15m	80-89	NIR	0.200	
CRE	OTTER	o15m Total			0.200	
CRE Total					0.210	
FOX	OTTER	o15m	80-89	SCO	0.027	
FOX	OTTER	o15m Total			0.027	
FOX Total					0.027	

Table 6.5.9.2 (cont.) West of Scotland. Landings and discards (tonnes) by country, vessel length and mesh size range of vessels using mesh between 80mm-100mm. Scottish effort is all targeted at Nephrops within the cod recovery zone. The proportion of effort and catches inside the cod recovery zone is not known for other nations. Note that discard data are only available for some species (COD, HAD, POK and WHG) and member states. The lack of discard information for a given species in this table represents no information rather than zero discards.

SPECIES	GEAR	VESSEL_LENGTH	MESH_SIZE_RANGE	COUNTRY	LANDINGS	DISCARDS
HAD	OTTER	o10t15m	80-89	NIR	0.458	
HAD	OTTER	o10t15m		SCO	1.270	0.902
HAD	OTTER	o10t15m	90-99	SCO	0.983	0.698
HAD	OTTER	o10t15m Total			2.711	1.599
HAD	OTTER	o15m	80-89	IRL	7.770	
HAD	OTTER	o15m		NIR	4.145	
HAD	OTTER	o15m		SCO	27.832	19.758
HAD	OTTER	o15m	90-99	ENG	0.376	
HAD	OTTER	o15m		NIR	0.043	
HAD	OTTER	o15m		SCO	12.575	8.927
HAD	OTTER	o15m Total			52.742	28.686
HAD Total					55.452	30.285
HKE	OTTER	o10t15m	80-89	NIR	0.248	
HKE	OTTER	o10t15m		SCO	0.489	
HKE	OTTER	o10t15m Total			0.737	
HKE	OTTER	o15m	80-89	IRL	4.110	
HKE	OTTER	o15m		NIR	1.432	
HKE	OTTER	o15m		SCO	36.733	
HKE	OTTER	o15m	90-99	ENG	0.116	
HKE	OTTER	o15m		NIR	0.041	
HKE	OTTER	o15m		SCO	6.105	
HKE	OTTER	o15m Total			48.537	
HKE Total					49.274	
JAX	OTTER	o15m	80-89	IRL	0.050	
JAX	OTTER	o15m Total			0.050	
JAX Total					0.050	
MAC	OTTER	o15m	80-89	IRL	0.270	
MAC	OTTER	o15m		NIR	0.034	
MAC	OTTER	o15m Total			0.304	
MAC Total					0.304	
NEP	OTTER	o10t15m	80-89	ENG	4.790	
NEP	OTTER	o10t15m		NIR	97.753	
NEP	OTTER	o10t15m		SCO	2327.626	
NEP	OTTER	o10t15m	90-99	ENG	30.816	
NEP	OTTER	o10t15m		SCO	201.249	
NEP	OTTER	o10t15m Total			2662.233	
NEP	OTTER	o15m	80-89	IRL	7.100	
NEP	OTTER	o15m		NIR	935.894	
NEP	OTTER	o15m		SCO	3635.228	
NEP	OTTER	o15m	90-99	ENG	5.619	
NEP	OTTER	o15m		NIR	9.488	
NEP	OTTER	o15m		SCO	1759.348	
NEP	OTTER	o15m Total			6352.677	
NEP Total					9014.910	

Table 6.5.9.2 (cont.) West of Scotland. Landings and discards (tonnes) by country, vessel length and mesh size range of vessels using mesh between 80mm-100mm. Scottish effort is all targeted at Nephrops within the cod recovery zone. The proportion of effort and catches inside the cod recovery zone is not known for other nations. Note that discard data are only available for some species (COD, HAD, POK and WHG) and member states. The lack of discard information for a given species in this table represents no information rather than zero discards.

SPECIES	GEAR	VESSEL_LENGTH	MESH_SIZE_RANGE	COUNTRY	LANDINGS	DISCARDS
PLE	OTTER	o10t15m	80-89	IRL	0.010	
PLE	OTTER	o10t15m		NIR	0.044	
PLE	OTTER	o10t15m		SCO	0.108	
PLE	OTTER	o10t15m Total			0.162	
PLE	OTTER	o15m	80-89	IRL	0.130	
PLE	OTTER	o15m		NIR	0.019	
PLE	OTTER	o15m		SCO	0.857	
PLE	OTTER	o15m	90-99	ENG	0.016	
PLE	OTTER	o15m		NIR	0.032	
PLE	OTTER	o15m		SCO	0.804	
PLE	OTTER	o15m Total			1.859	
PLE Total					2.021	
POK	OTTER	o15m	80-89	FRA	1.300	
POK	OTTER	o15m		IRL	1.270	
POK	OTTER	o15m		SCO	1.098	
POK	OTTER	o15m	90-99	SCO	0.589	
POK	OTTER	o15m Total			4.258	
POK Total					4.258	
RAJ	OTTER	o10t15m	80-89	IRL	0.320	
RAJ	OTTER	o10t15m Total			0.320	
RAJ	OTTER	o15m	80-89	IRL	3.780	
RAJ	OTTER	o15m Total			3.780	
RAJ Total					4.100	
SOL	OTTER	o10t15m	80-89	IRL	0.020	
SOL	OTTER	o10t15m		NIR	0.009	
SOL	OTTER	o10t15m		SCO	0.020	
SOL	OTTER	o10t15m Total			0.049	
SOL	OTTER	o15m	80-89	IRL	0.020	
SOL	OTTER	o15m		NIR	0.151	
SOL	OTTER	o15m		SCO	0.857	
SOL	OTTER	o15m	90-99	SCO	0.272	
SOL	OTTER	o15m Total			1.300	
SOL Total					1.349	
WHG	OTTER	o10t15m	80-89	NIR	0.010	
WHG	OTTER	o10t15m		SCO	1.232	2.800
WHG	OTTER	o10t15m	90-99	SCO	0.819	1.861
WHG	OTTER	o10t15m Total			2.061	4.661
WHG	OTTER	o15m	80-89	IRL	0.070	
WHG	OTTER	o15m		NIR	0.034	
WHG	OTTER	o15m		SCO	14.583	33.136
WHG	OTTER	o15m	90-99	SCO	8.016	18.214
WHG	OTTER	o15m Total			22.703	51.351
WHG Total					24.765	56.012

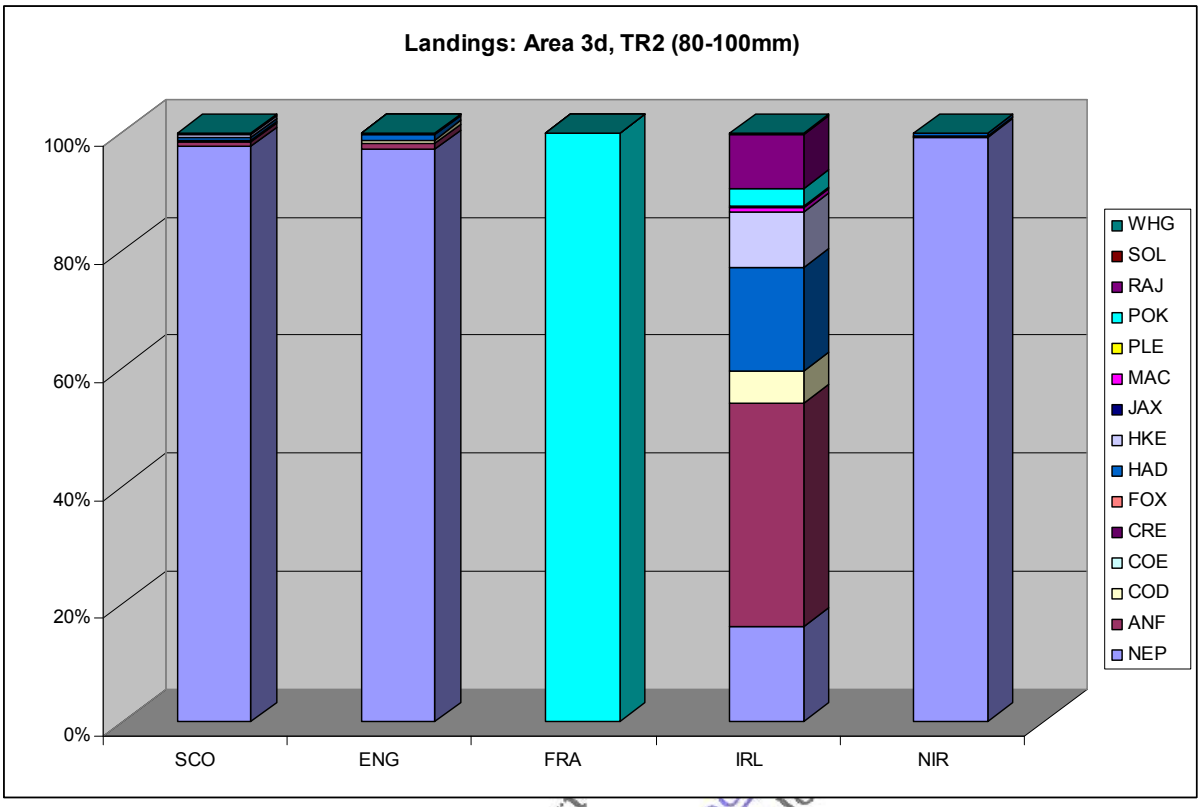


Figure 6.5.9.1 West of Scotland. Species composition (%) of landings of vessels using mesh between 80mm-100mm. Scottish effort is all targeted at Nephrops within the cod recovery zone. The proportion of effort and catches inside the cod recovery zone is not known for other nations.

7. REVIEW OF ANNEX IIB OF REGULATION 43/2009 IN THE CONTEXT OF THE RECOVERY PLAN FOR SOUTHERN HAKE AND *NEPHROPS* (REGULATION 2166/2005)

7.1. General considerations regarding the derogations and special conditions

STECF-SGMOS considers that Annex IIB of Council Reg. 43/2009 represents a fleet specific effort management regime which supports the southern hake and *Nephrops* recovery plan (Council Reg. 2166/2005). Annex IIB excludes the Gulf of Cádiz although this area is included in the recovery plan regulation (EC Reg 2166/2005) and is part of the definition of the stock area of southern hake and Iberian *Nephrops*.

STECF-SGMOS notes that the classification of the trawl mesh size ≥32mm in Annex IIB mixes two clearly defined Portuguese fisheries. One fishery targets demersal fish species with mesh size 65-69mm, and the other targets crustaceans using two different mesh sizes (shrimps with mesh size 55-59mm and *Nephrops* with mesh size ≥70mm) with different licenses, operating in different fishing grounds and depth ranges. A clear identification of these mesh sizes in the effort regulation may provide more focused and efficient effort management.

STECF-SGMOS notes that under the gear groups indicated in point 3 of the Annex IIB there is a mixture of 10 different Spanish metiers: "baca", "jurelera", pair bottom trawl (PTB), "volanta", "rasco", "*LLS-COE", "LLS-HKE", "LLS-POL", ("LLS-BSS") and "LLS-MIX"*.

Otter bottom trawl, with cod end mesh size of 65 mm, a vertical opening of 1.2-1.5 m and a wingspread of 22-25 m (metier "baca") targets demersal species while the same gear with a vertical opening of 5-5.5 m and wingspread of 18-20 m (metier "jurelera") targets horse mackerel and other pelagics (Fonseca et al., 2000).

PTB, with cod end mesh size between 45-55 mm (Fonseca et al., 2000), vertical opening of 25 m and a wingspread of 65 m, targets blue whiting (69% of the total catches) and hake (IBERMIX, 2007).

The gillnet fleet is divided in metier "volanta", with mesh size of 90 mm operating in depths between 100 and 400 and targeting hake and metier "rasco", with mesh size of 280 mm operating in depths between 100-800 m and catching anglerfish.

The longline fleet is divided by targets species: conger (metier "*LLS-COE"), hake ("LLS-HKE"), pollack ("LLS-POL"), seabass ("LLS-BSS"), mixed fishery ("LLS-MIX")*. The metier "LLS-HKE" represents only the 15% of the longline effort and is the only fishery targeting large hake of breeding size (IBERMIX, 2007).

STECF-SGMOS considers that the use of fishing days (or kW*days) to manage effort of static gears such as gillnets and longlines is a very poor approximation of the effective effort and thus may put at risk the management goals. A possible way to improve the impact of the effort management towards an effective reduction in fishing mortality of static gears could be to enforce continuous closed periods so that fishermen will have to bring their gear ashore and stop fishing during certain periods.

The following Table 7.1.1 lists the historic developments of days at sea by vessel and derogations.

Table 7.1.1 Historic trends in days at sea by vessel specified in the Council Regulations since 2005.

Annex	AREA	REG GEAR	SPECON	2003	2004	2005	2006	2007	2008	2009
IIB	8c9a	3a former 3ai and 3aii	none			264	240	216	194	175
IIB	8c9a	3a former 3ai and 3aii	IIB71ab			365	365	365	365	365
IIB	8c9a	3ai deleted	none			264	240			
IIB	8c9a	3ai deleted	IIB71ab			365	365			
IIB	8c9a	3aii deleted	none			264	240			
IIB	8c9a	3aii deleted	IIB71ab			365	365			
IIB	8c9a	3b former 3bi and 3bii	none			264	240	216	194	175
IIB	8c9a	3b former 3bi and 3bii	IIB71a			365	365	365	365	365
IIB	8c9a	3bi deleted	none			264	240			
IIB	8c9a	3bi deleted	IIB71a			365	365			
IIB	8c9a	3bii deleted	none			264	240			
IIB	8c9a	3bii deleted	IIB71a			365	365			
IIB	8c9a	3c	none			264	240	216	194	175
IIB	8c9a	3c	IIB71a			365	365	365	365	365

7.2. Trend in effort 2000-2009 by derogation and by Member State

Effort information in kW*days, GT*days and number of vessels by quarter, gear, mesh size range, area and special condition was provided by Portugal, France, England, Scotland, Germany, Ireland and Netherlands in the Divisions 8c and 9a for the years 2000-2009, and for 2002-2009 by Spain.

According to Annex IIB of Regulation 43/2009 in the context of the recovery plan for southern hake and *Nephrops* stocks, fishing vessels with overall length above 10 meters that have trawl nets with mesh sizes >32 mm or gillnets > 60 mm or bottom longlines may be present within the area for a maximum of 175 days during 2009 (Table I of the Annex II B).

If, during 2001, 2002 and 2003 these vessels fished less than 5 tonnes of hake and 2.5 of *Nephrops* per year they do not have this effort limitation, but are obliged not to exceed the same amounts in 2009.

The available effort data in terms of kW*days by Member State is given in Table 7.2.1.

The effort deployed in Gross tonnage days (GT*days) and number of vessels are not described in this report but can be found on the STECF SGMOS 10-05 website under the Final Report section: https://stecf.jrc.ec.europa.eu/meetings/2010?p_p_id=62_INSTANCE_Hk1G&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&p_p_col_id=column-2&p_p_col_count=1&_62_INSTANCE_Hk1G_struts_action=%2Fjournal_articles%2Fview&_62_INSTANCE_Hk1G_groupId=43805&_62_INSTANCE_Hk1G_articleId=44677&_62_INSTANCE_Hk1G_version=1.0

In addition to the 2007 regulation, defined gear types 3a (bottom trawler mesh size ≥32 mm), 3b (gillnet ≥60 mm), 3c (bottom longline) and the undefined (none), the tables include trammel nets under the coding "3t", as they were found to contribute significantly to the static effort deployed.

Table 7.2.1 Trend in nominal effort (kW*days at sea) by Member State and existing derogations given in Table 1 of Annex IIB (Coun. Reg. 43/2009), 2000-2009. Derogations are sorted by gear, special condition (SPECON) and country. Data qualities are summarised in section 5.5.2 and Table 5.5.2.1. Note that the gear type 3t denotes the non-regulated (effort) trammel gear with all mesh sizes.

ANNEX	REG AREA	REG GEAR	SPECON	COUNTRY	2 000	2 001	2 002	2 003	2 004	2 005	2 006	2 007	2 008	2 009
IIb	8c-9a	3a	IIB72ab	POR			8 963	3 670 753	3 223 043	3 616 109	1 113 263	188 056	196 676	313 235
IIb	8c-9a	3a	IIB72ab	SPN			2 109 760	1 820 929	3 051 855	2 677 605	2 420 208	2 458 721	2 478 225	2 403 446
IIb	8c-9a	3a	none	ENG						1 277				
IIb	8c-9a	3a	none	FRA	63 277	123 663	484 849	120 552	110 098	198 178	345 256	274 429	315 954	315 954
IIb	8c-9a	3a	none	IRL				4 208			1 612			
IIb	8c-9a	3a	none	POR	6 113 041	3 086 305	3 609 027	6 984 080	6 661 270	7 041 698	8 301 530	9 472 235	8 619 620	7 614 154
IIb	8c-9a	3a	none	SPN			9 822 108	15 456 694	14 344 840	11 072 135	11 473 544	9 902 350	7 975 346	7 959 428
IIb	8c-9a	3b	IIB72ab	POR			5 884	314 481	161 614	222 302	238 980	146 686	176 157	273 361
IIb	8c-9a	3b	IIB72ab	SPN			671 679	662 947	865 145	1 033 742	916 120	1 056 900	1 330 193	1 668 152
IIb	8c-9a	3b	none	ENG							26 652	1 984		
IIb	8c-9a	3b	none	FRA	4 723	4 750	24 598	5 762	28 023	97 700	69 478	128 595	296 765	296 765
IIb	8c-9a	3b	none	POR	344 337	375 240	413 390	581 437	472 306	876 593	613 635	822 800	883 504	779 066
IIb	8c-9a	3b	none	SCO							3 234			
IIb	8c-9a	3b	none	SPN			438 463	450 978	684 167	787 527	916 038	1 010 060	1 195 943	1 480 125
IIb	8c-9a	3c	IIB72ab	POR	114 581	130 960	76 413	619 071	334 705	791 087	671 657	198 614	206 065	385 771
IIb	8c-9a	3c	IIB72ab	SPN			591 039	621 801	692 039	686 974	755 191	846 255	897 264	1 099 242
IIb	8c-9a	3c	none	ENG				8 853			4 928			
IIb	8c-9a	3c	none	FRA	1 738		3 312	3 318	3 972	2 094	588	700	40 052	40 052
IIb	8c-9a	3c	none	IRL							1 684	2 472		
IIb	8c-9a	3c	none	POR		12 024		97 797	41 191	52 824	76 823	85 881	99 027	81 706
IIb	8c-9a	3c	none	SPN			310 392	344 686	383 472	545 271	830 548	522 362	521 613	728 602
IIb	8c-9a	3t	none	FRA	4 108		23 894	3 977	525		1 878		2 823	2 823
IIb	8c-9a	3t	none	POR	124 356	127 599	154 551	555 320	795 537	1 144 431	1 380 146	1 401 190	1 233 274	1 416 574
IIb	8c-9a	3t	none	SPN			461 705	438 995	736 892	955 031	742 397	716 707	917 963	932 788
IIb	8c-9a	none	none	ENG							3 136			
IIb	8c-9a	none	none	FRA	85 431	159 563	1 216 983	224 468	97 130	125 835	318 711	317 890	44 551	44 551
IIb	8c-9a	none	none	GER								15 685	23 373	6 174
IIb	8c-9a	none	none	IRL		1 585	4 281	11 686			6 020			
IIb	8c-9a	none	none	POR	0	0	0	159 898	139 012	305 405	290 662	338 861	495 748	441 155
IIb	8c-9a	none	none	SPN	0	0	18 346 437	24 809 378	16 299 264	15 443 521	13 662 008	14 825 151	13 411 326	15 960 434

Differences between the 2009 and 2010 data submissions are given in Table 7.2.2.

Table 7.2.2 Differences in effort data submissions between 2009 and 2010 by Member State.

REG	GEAR	SPECON	COUNTRY	2000	2001	2002	2003	2004	2005	2006	2007	2008
3a		IIB72ab	POR	0	0	0.212	0.288	2.012	1.185	0.426	-0.452	-0.11
3a		IIB72ab	SPN	0	0	0	0	0	15.675	38.854	-0.118	-0.389
3a		none	ENG	0	0	0	0	0	0	0	0	0
3a		none	FRA	-0.422	-0.142	2.247	0.001	-0.133	-0.543	-0.048	0.359	0.059
3a		none	IRL	0	0	0	0	0	0	0	0	0
3a		none	POR	0	0	15.294	0.387	0.134	0.568	0.307	0.019	-0.016
3a		none	SPN	0	0	-0.248	0.349	3.133	11.57	12.161	1.802	0.708
3b		IIB72ab	POR	0	0	0	5.361	50.601	1.344	0.255	-0.395	-0.267
3b		IIB72ab	SPN	0	0	0	0	0	154.567	607.718	2.216	1.746
3b		none	ENG	0	0	0	0	0	0	0	0	0
3b		none	FRA	0.852	-0.058	8.895	2.694	0.631	0.011	0.889	1.674	4.472
3b		none	POR	0	0	0	6.902	13.522	5.211	1.535	0.135	0.14
3b		none	SCO	0	0	0	0	0	0	0	0	0
3b		none	SPN	0	0	-0.414	-0.412	1.203	13.128	100.186	0.346	-0.033
3c		IIB72ab	POR	13.12	239.735	4.034	7.245	5.706	7.749	2.331	-0.432	0.094
3c		IIB72ab	SPN	0	0	0	0	0	21.45	22.275	18.063	17.977
3c		none	ENG	0	0	0	0	0	0	0	0	0
3c		none	FRA	1.401	0	0	0	0	3.138	0	0	2.496
3c		none	IRL	0	0	0	0	0	0	0	0	0
3c		none	POR		-0.946		-0.777	-0.874	-0.907	-0.869	-0.744	-0.755
3c		none	SPN	0	0	-0.878	-0.84	-0.86	-0.819	-0.702	-0.84	-0.76
3t		none	FRA	0.386	0	1.483	1.058	1.397	0	5.117	0	0.926
3t		none	POR	-0.31	-0.432	-0.335	-0.154	-0.395	-0.311	-0.302	-0.21	-0.096
3t		none	SPN	0	0	0.594	0.437	0.35	0.719	0.375	0.292	0.454
none		none	SPN	0	0	16.427	25.893	22.896	44.592	25.017	25.249	184.771
none		none	POR	0	0	0	-0.495	-0.634	-1.511	-1.478	-1.328	-1.063
none		none	FRA	35.586	0	0	0	0	0	176.287	0	0
none		none	IRL	0	0	0	0	0	0	0	0	0
none		none	ENG	0	0	0	0	0	0	0	0	0
none		none	GER	0	0	0	0	0	0	0	0	0

Figure 7.2.1 shows effort trends for Portugal and Spain, countries with most activity in the area. The data submitted by the member states for the years 2000-2004, the initial period of the time series, do not seem realistic as several gears exhibit very low effort data and/or gaps. Section 7.9 provides more details on data quality provided by Member States. Spanish unregulated gears (SPN-NONE), Spanish and Portuguese regulated trawlers (SPN-3A and POR-3A, respectively) are the gears deploying most effort in the area (2007-2009 average), 34%, 25% and 20% respectively.

Spanish unregulated gears (SPN-NONE, Fig. 7.2.1) effort has been stable in the last 6 years. The effort of trawlers (3A) under effort restrictions (solid line) is decreasing since 2003 in the case of Spain and since 2007 in the case of Portugal. The effort of trawlers (3A) without effort restrictions (IIB72AB, dashed line) has been stable since 2006 in the case of Spain and since 2007 in the Portuguese case.

The effort of the Spanish regulated gillnet (SPN-3B) and longline (SPN-3C), (6% and 4%, respectively) has slightly increased in the period, while Portuguese regulated gillnet (POR-3B) and longline (POR-3C), (2% and 1%, respectively) has been stable.

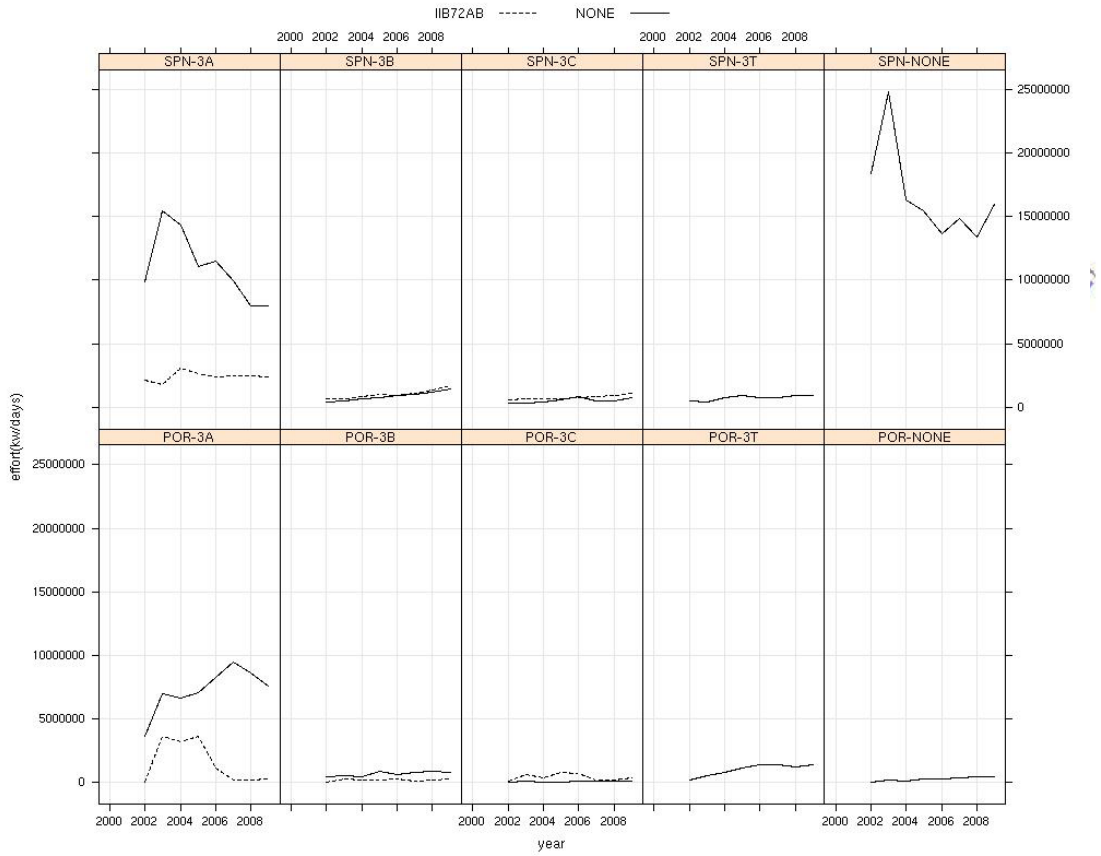


Fig. 7.2.1 Effort trends by gear type and Member State.

Figure 7.2.2 identifies the Spanish unregulated gears (SPN-NONE) (2007-2009 average), "None" information (30%) corresponds to tuna and mackerel gears (troll and hand lines), while gillnet and otter information for SPN-NONE (6% and 1%) are from unregulated or un- identified mesh sizes.

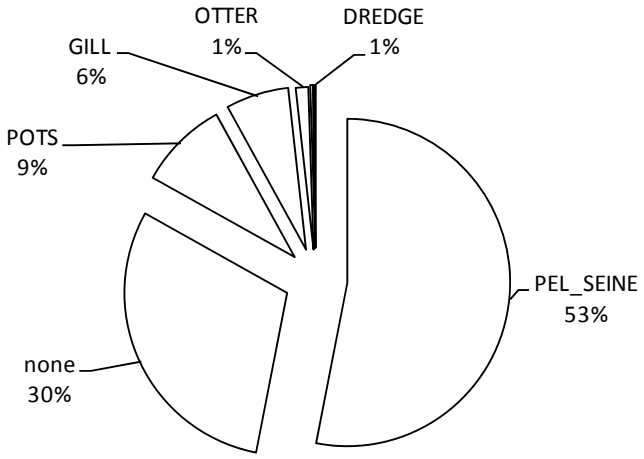


Figure 7.2.2. Spanish non regulated gears (SPN-NONE): effort (KW*day) by gear (2007-2009 average). "none" gears (30%) are composed of tuna and mackerel gears (troll and hand lines).

The Table 7.2.3 and the Figure 7.2.3 list the trend in effort by derogation since 2000 in terms of kW*days at sea, GT*days at sea and number of vessel, respectively are available on the web.

Table 7.2.3 Trend in nominal effort (kW*days at sea) by derogations given in Table 1 of Annex IIB (Coun. Reg. 40/2008), 2000-2009. Derogations are sorted by gear and special condition (SPECON). Data qualities are summarised in section 5.5.2 and Table 5.5.2.1. Note that the gear type 3t denotes the non-regulated (effort) trammel gear with all mesh sizes.

annex	reg_area	reg_gear	specon	2 000	2 001	2 002	2 003	2 004	2 005	2 006	2 007	2 008	2 009
IIb	8c-9a	3a	IIB72AB			2 118 723	5 491 682	6 274 898	6 293 714	3 533 471	2 646 777	2 674 901	2 716 681
IIb	8c-9a	3a	NONE	6 176 318	3 209 968	13 915 984	22 565 534	21 116 208	18 313 288	20 121 942	19 649 014	16 910 920	15 573 582
IIb	8c-9a	3b	IIB72AB			677 563	977 428	1 026 759	1 256 044	1 155 100	1 203 586	1 506 350	1 941 513
IIb	8c-9a	3b	NONE	349 060	379 990	876 451	1 038 177	1 184 496	1 761 820	1 629 037	1 963 439	2 376 212	2 259 191
IIb	8c-9a	3c	IIB72AB	114 581	130 960	667 452	1 240 872	1 026 744	1 478 061	1 426 848	1 044 869	1 103 329	1 485 013
IIb	8c-9a	3c	NONE	1 738	12 024	313 704	454 654	428 635	600 189	914 571	611 415	660 692	810 308
IIb	8c-9a	3t	NONE	128 464	127 599	640 150	998 292	1 532 954	2 099 462	2 124 421	2 117 897	2 154 060	2 349 362
IIb	8c-9a	NONE	NONE	85 431	161 148	19 567 701	25 205 430	16 535 406	15 874 761	14 280 537	15 497 587	13 974 998	16 407 763

Trawl deploys most effort in the area (~ 45%), and most of this (~ 85%) is under effort control. Between 2007 and 2009 passive gears (3b, 3c and 3t) accounted for approximately 18% of all effort. However, such results have a limited meaning regarding the fishing pressure executed by these fleets, since kw/day does not take into account the number of hooks and area of the nets and so is a poor indicator of the fishing activity. In 2007-2009 about 40% of the effort was assigned to other gears than the regulated ones ("3t" and "none" gears), of which trammel nets ("3t") contribute 5% to the overall effort deployed. Most of this effort is deployed by gears that do not target hake, *Nephrops* or anglerfish. Figure 7.2.3 show the effort trends by gear type, the dashed line identifies the period before the enforcement of effort control measures. The effort of trawlers (3A) has decreased since 2003, while the effort of gillnets (3B) has slightly increased. The effort of longline (3C), trammel (3T) and unregulated gears (NONE) has been stable since the effort control measures were enforced.

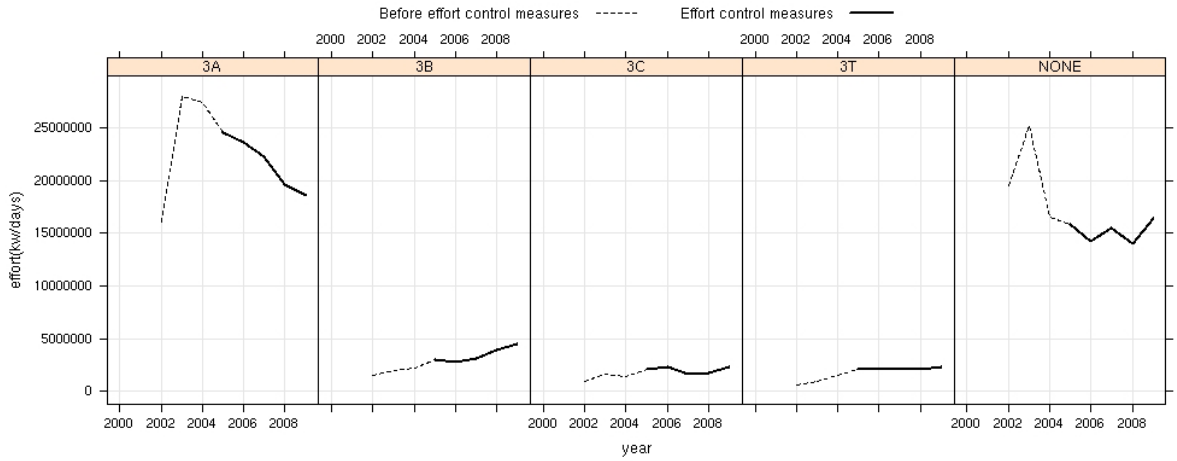


Fig. 7.2.3. Effort trends by gear type.

7.3. Trend in catch estimates 2003-2008 by derogation in management areas 8c and 9a

Portugal and Spain provided data on 2002-2009 landings. Countries did not provide hake and anglerfish information by age because there are doubts about the ageing of these species (see ICES 2009 WGHMM). Spanish numbers at age are provided for anchovy, blue whiting and mackerel for 2003-2008. Portugal did not provide age information for other species. The source of the information provided (logbooks) cover more than 90% of the landings reported to ICES (WGHMM 2010) in the Spanish case, and about 60% in the Portuguese case. A part of this discrepancy is due to the landings of small scale vessels (<10m) that were not reported.

Both countries provided discard information for hake. However, the Spanish discards show unrealistic values for the years before 2009. To overcome this problem, discard ratios from ICES 2010 WGHMM report have been applied to compute the Spanish hake's discard time series.

The contributions of the individual derogations to the overall landings can be taken from Tables 7.3.1. For brevity, the following sections present the landings and discards for each derogation by weight and are restricted to the following species, monk (ANF), hake (HKE), *Nephrops* (NEP), horse mackerel (JAX), mackerel (MAC), *Penaeus* shrimps (PEN), rays (RAJ) and blue whiting (WHB).

Table 7.3.1 (I) Landings (t), discards (t) by species and derogation, 2003-2009. Regulation gears codes according to the EC Council Regulation No 41/2007: 3a) bottom trawls of mesh size ≥ 32 mm, 3b) gill-nets of mesh size ≥ 60 mm, 3c) bottom long-lines. Gear type "3t" denotes the non-regulated (effort) trammel gear with all mesh sizes, gear type "none" contains other gears and the gears not allocated.

annex	area	species	year	gear	specon	landings	discards
IIB	8C-9A	ANF	2003	3A	IIB72AB	190	0
IIB	8C-9A	ANF	2003	3A	NONE	1291	0
IIB	8C-9A	ANF	2003	3B	IIB72AB	206	0
IIB	8C-9A	ANF	2003	3B	NONE	58	0
IIB	8C-9A	ANF	2003	3C	IIB72AB	1	0
IIB	8C-9A	ANF	2003	3C	NONE	0	0
IIB	8C-9A	ANF	2003	3T	NONE	170	0
IIB	8C-9A	ANF	2003	NONE	NONE	221	0
IIB	8C-9A	ANF	2004	3A	IIB72AB	197	0
IIB	8C-9A	ANF	2004	3A	NONE	1366	0
IIB	8C-9A	ANF	2004	3B	IIB72AB	285	0
IIB	8C-9A	ANF	2004	3B	NONE	252	0
IIB	8C-9A	ANF	2004	3C	IIB72AB	1	0
IIB	8C-9A	ANF	2004	3C	NONE	3	0
IIB	8C-9A	ANF	2004	3T	NONE	398	0
IIB	8C-9A	ANF	2004	NONE	NONE	263	0
IIB	8C-9A	ANF	2005	3A	IIB72AB	257	0
IIB	8C-9A	ANF	2005	3A	NONE	1615	0
IIB	8C-9A	ANF	2005	3B	IIB72AB	513	0
IIB	8C-9A	ANF	2005	3B	NONE	459	0
IIB	8C-9A	ANF	2005	3C	IIB72AB	1	0
IIB	8C-9A	ANF	2005	3C	NONE	1	0
IIB	8C-9A	ANF	2005	3T	NONE	379	0
IIB	8C-9A	ANF	2005	NONE	NONE	367	0
IIB	8C-9A	ANF	2006	3A	IIB72AB	276	0
IIB	8C-9A	ANF	2006	3A	NONE	1728	0
IIB	8C-9A	ANF	2006	3B	IIB72AB	534	0
IIB	8C-9A	ANF	2006	3B	NONE	613	0
IIB	8C-9A	ANF	2006	3C	IIB72AB	3	0
IIB	8C-9A	ANF	2006	3C	NONE	1	0
IIB	8C-9A	ANF	2006	3T	NONE	311	0
IIB	8C-9A	ANF	2006	NONE	NONE	436	0
IIB	8C-9A	ANF	2007	3A	IIB72AB	317	0
IIB	8C-9A	ANF	2007	3A	NONE	1579	0
IIB	8C-9A	ANF	2007	3B	IIB72AB	368	0
IIB	8C-9A	ANF	2007	3B	NONE	403	0
IIB	8C-9A	ANF	2007	3C	IIB72AB	2	0
IIB	8C-9A	ANF	2007	3C	NONE	14	0
IIB	8C-9A	ANF	2007	3T	NONE	259	0
IIB	8C-9A	ANF	2007	NONE	NONE	280	0
IIB	8C-9A	ANF	2008	3A	IIB72AB	332	0
IIB	8C-9A	ANF	2008	3A	NONE	1257	0
IIB	8C-9A	ANF	2008	3B	IIB72AB	400	0
IIB	8C-9A	ANF	2008	3B	NONE	391	0
IIB	8C-9A	ANF	2008	3C	IIB72AB	2	0
IIB	8C-9A	ANF	2008	3C	NONE	4	0
IIB	8C-9A	ANF	2008	3T	NONE	236	0
IIB	8C-9A	ANF	2008	NONE	NONE	216	0
IIB	8C-9A	ANF	2009	3A	IIB72AB	281	0

Table 7.3.1 continued (I).

annex	area	species	year	gear	specon	landings	discards
IIB	8C-9A	ANF	2009	3A	NONE	951	0
IIB	8C-9A	ANF	2009	3B	IIB72AB	319	0
IIB	8C-9A	ANF	2009	3B	NONE	412	0
IIB	8C-9A	ANF	2009	3C	IIB72AB	1	0
IIB	8C-9A	ANF	2009	3C	NONE	1	0
IIB	8C-9A	ANF	2009	3T	NONE	272	0
IIB	8C-9A	ANF	2009	NONE	NONE	254	0
IIB	8C-9A	HKE	2003	3A	IIB72AB	174	0
IIB	8C-9A	HKE	2003	3A	NONE	2038	0
IIB	8C-9A	HKE	2003	3B	IIB72AB	102	0
IIB	8C-9A	HKE	2003	3B	NONE	604	0
IIB	8C-9A	HKE	2003	3C	IIB72AB	22	0
IIB	8C-9A	HKE	2003	3C	NONE	106	0
IIB	8C-9A	HKE	2003	3T	NONE	97	0
IIB	8C-9A	HKE	2003	NONE	NONE	409	0
IIB	8C-9A	HKE	2004	3A	IIB72AB	202	26
IIB	8C-9A	HKE	2004	3A	NONE	2240	243
IIB	8C-9A	HKE	2004	3B	IIB72AB	159	0
IIB	8C-9A	HKE	2004	3B	NONE	657	0
IIB	8C-9A	HKE	2004	3C	IIB72AB	63	0
IIB	8C-9A	HKE	2004	3C	NONE	83	0
IIB	8C-9A	HKE	2004	3T	NONE	194	0
IIB	8C-9A	HKE	2004	NONE	NONE	231	1
IIB	8C-9A	HKE	2005	3A	IIB72AB	394	119
IIB	8C-9A	HKE	2005	3A	NONE	3389	749
IIB	8C-9A	HKE	2005	3B	IIB72AB	237	0
IIB	8C-9A	HKE	2005	3B	NONE	1072	0
IIB	8C-9A	HKE	2005	3C	IIB72AB	134	0
IIB	8C-9A	HKE	2005	3C	NONE	140	0
IIB	8C-9A	HKE	2005	3T	NONE	197	0
IIB	8C-9A	HKE	2005	NONE	NONE	291	2
IIB	8C-9A	HKE	2006	3A	IIB72AB	1299	499
IIB	8C-9A	HKE	2006	3A	NONE	5418	2085
IIB	8C-9A	HKE	2006	3B	IIB72AB	439	0
IIB	8C-9A	HKE	2006	3B	NONE	1257	0
IIB	8C-9A	HKE	2006	3C	IIB72AB	242	0
IIB	8C-9A	HKE	2006	3C	NONE	139	0
IIB	8C-9A	HKE	2006	3T	NONE	318	0
IIB	8C-9A	HKE	2006	NONE	NONE	324	22
IIB	8C-9A	HKE	2007	3A	IIB72AB	1533	229
IIB	8C-9A	HKE	2007	3A	NONE	6487	1367
IIB	8C-9A	HKE	2007	3B	IIB72AB	688	0
IIB	8C-9A	HKE	2007	3B	NONE	2042	0
IIB	8C-9A	HKE	2007	3C	IIB72AB	411	0
IIB	8C-9A	HKE	2007	3C	NONE	186	0
IIB	8C-9A	HKE	2007	3T	NONE	323	0
IIB	8C-9A	HKE	2007	NONE	NONE	399	14
IIB	8C-9A	HKE	2008	3A	IIB72AB	1871	309
IIB	8C-9A	HKE	2008	3A	NONE	7282	1535

Table 7.3.1 continued (II).

annex	area	species	year	gear	specon	landings	discards
IIB	8C-9A	HKE	2008	3B	IIB72AB	870	0
IIB	8C-9A	HKE	2008	3B	NONE	2917	0
IIB	8C-9A	HKE	2008	3C	IIB72AB	1007	0
IIB	8C-9A	HKE	2008	3C	NONE	420	0
IIB	8C-9A	HKE	2008	3T	NONE	235	0
IIB	8C-9A	HKE	2008	NONE	NONE	588	21
IIB	8C-9A	HKE	2009	3A	IIB72AB	2293	452
IIB	8C-9A	HKE	2009	3A	NONE	7915	2230
IIB	8C-9A	HKE	2009	3B	IIB72AB	930	0
IIB	8C-9A	HKE	2009	3B	NONE	3207	0
IIB	8C-9A	HKE	2009	3C	IIB72AB	1561	0
IIB	8C-9A	HKE	2009	3C	NONE	746	0
IIB	8C-9A	HKE	2009	3T	NONE	359	0
IIB	8C-9A	HKE	2009	NONE	NONE	523	25
IIB	8C-9A	JAX	2003	3A	IIB72AB	4005	0
IIB	8C-9A	JAX	2003	3A	NONE	16632	0
IIB	8C-9A	JAX	2003	3B	IIB72AB	67	0
IIB	8C-9A	JAX	2003	3B	NONE	43	0
IIB	8C-9A	JAX	2003	3C	IIB72AB	9	0
IIB	8C-9A	JAX	2003	3C	NONE	2	0
IIB	8C-9A	JAX	2003	3T	NONE	60	0
IIB	8C-9A	JAX	2003	NONE	NONE	14441	0
IIB	8C-9A	JAX	2004	3A	IIB72AB	6559	0
IIB	8C-9A	JAX	2004	3A	NONE	20253	0
IIB	8C-9A	JAX	2004	3B	IIB72AB	108	0
IIB	8C-9A	JAX	2004	3B	NONE	64	0
IIB	8C-9A	JAX	2004	3C	IIB72AB	6	0
IIB	8C-9A	JAX	2004	3C	NONE	3	0
IIB	8C-9A	JAX	2004	3T	NONE	99	0
IIB	8C-9A	JAX	2004	NONE	NONE	15239	0
IIB	8C-9A	JAX	2005	3A	IIB72AB	4917	0
IIB	8C-9A	JAX	2005	3A	NONE	19739	0
IIB	8C-9A	JAX	2005	3B	IIB72AB	98	0
IIB	8C-9A	JAX	2005	3B	NONE	105	0
IIB	8C-9A	JAX	2005	3C	IIB72AB	8	0
IIB	8C-9A	JAX	2005	3C	NONE	2	0
IIB	8C-9A	JAX	2005	3T	NONE	156	0
IIB	8C-9A	JAX	2005	NONE	NONE	13493	0
IIB	8C-9A	JAX	2006	3A	IIB72AB	5159	0
IIB	8C-9A	JAX	2006	3A	NONE	21064	0
IIB	8C-9A	JAX	2006	3B	IIB72AB	121	0
IIB	8C-9A	JAX	2006	3B	NONE	83	0
IIB	8C-9A	JAX	2006	3C	IIB72AB	17	0
IIB	8C-9A	JAX	2006	3C	NONE	2	0
IIB	8C-9A	JAX	2006	3T	NONE	211	0
IIB	8C-9A	JAX	2006	NONE	NONE	12800	0
IIB	8C-9A	JAX	2007	3A	IIB72AB	4067	0
IIB	8C-9A	JAX	2007	3A	NONE	20396	0
IIB	8C-9A	JAX	2007	3B	IIB72AB	167	0

Table 7.3.1 continued (III).

annex	area	species	year	gear	specon	landings	discards	
IIB	8C-9A	JAX	2007	3B	NONE	203	0	
IIB	8C-9A	JAX	2007	3C	IIB72AB	10	0	
IIB	8C-9A	JAX	2007	3C	NONE	6	0	
IIB	8C-9A	JAX	2007	3T	NONE	211	0	
IIB	8C-9A	JAX	2007	NONE	NONE	12572	0	
IIB	8C-9A	JAX	2008	3A	IIB72AB	3267	0	
IIB	8C-9A	JAX	2008	3A	NONE	18292	0	
IIB	8C-9A	JAX	2008	3B	IIB72AB	235	0	
IIB	8C-9A	JAX	2008	3B	NONE	445	0	
IIB	8C-9A	JAX	2008	3C	IIB72AB	20	0	
IIB	8C-9A	JAX	2008	3C	NONE	6	0	
IIB	8C-9A	JAX	2008	3T	NONE	134	0	
IIB	8C-9A	JAX	2008	NONE	NONE	19391	0	
IIB	8C-9A	JAX	2009	3A	IIB72AB	386	0	
IIB	8C-9A	JAX	2009	3A	NONE	6751	0	
IIB	8C-9A	JAX	2009	3B	IIB72AB	221	0	
IIB	8C-9A	JAX	2009	3B	NONE	377	0	
IIB	8C-9A	JAX	2009	3C	IIB72AB	12	0	
IIB	8C-9A	JAX	2009	3C	NONE	13	0	
IIB	8C-9A	JAX	2009	3T	NONE	251	0	
IIB	8C-9A	JAX	2009	NONE	NONE	17683	0	
IIB	8C-9A	MAC	2003	3A	IIB72AB	2772	0	
IIB	8C-9A	MAC	2003	3A	NONE	8418	0	
IIB	8C-9A	MAC	2003	3B	IIB72AB	11	0	
IIB	8C-9A	MAC	2003	3B	NONE	47	0	
IIB	8C-9A	MAC	2003	3C	IIB72AB	13	0	
IIB	8C-9A	MAC	2003	3C	NONE	1	0	
IIB	8C-9A	MAC	2003	3T	NONE	32	0	
IIB	8C-9A	MAC	2003	NONE	NONE	6466	0	
IIB	8C-9A	MAC	2004	3A	IIB72AB	4694	0	
IIB	8C-9A	MAC	2004	3A	NONE	11694	0	
IIB	8C-9A	MAC	2004	3B	IIB72AB	45	0	
IIB	8C-9A	MAC	2004	3B	NONE	74	0	
IIB	8C-9A	MAC	2004	3C	IIB72AB	71	0	
IIB	8C-9A	MAC	2004	3C	NONE	6	0	
IIB	8C-9A	MAC	2004	3T	NONE	43	0	
IIB	8C-9A	MAC	2004	NONE	NONE	12820	0	
IIB	8C-9A	MAC	2005	3A	IIB72AB	5575	0	
IIB	8C-9A	MAC	2005	3A	NONE	17237	0	
IIB	8C-9A	MAC	2005	3B	IIB72AB	161	0	
IIB	8C-9A	MAC	2005	3B	NONE	61	0	
IIB	8C-9A	MAC	2005	3C	IIB72AB	145	0	
IIB	8C-9A	MAC	2005	3C	NONE	28	0	
IIB	8C-9A	MAC	2005	3T	NONE	40	0	
IIB	8C-9A	MAC	2005	NONE	NONE	20643	0	
IIB	8C-9A	MAC	2006	3A	IIB72AB	5666	0	
IIB	8C-9A	MAC	2006	3A	NONE	17321	0	
IIB	8C-9A	MAC	2006	3B	IIB72AB	57	0	
IIB	8C-9A	MAC	2006	3B	NONE	42	0	

Table 7.3.1 continued (IV).

annex	area	species	year	gear	specon	landings	discards	
IIB	8C-9A	MAC	2006	3C	IIB72AB	77	0	
IIB	8C-9A	MAC	2006	3C	NONE	3	0	
IIB	8C-9A	MAC	2006	3T	NONE	32	0	
IIB	8C-9A	MAC	2006	NONE	NONE	25798	0	
IIB	8C-9A	MAC	2007	3A	IIB72AB	4345	0	
IIB	8C-9A	MAC	2007	3A	NONE	12397	0	
IIB	8C-9A	MAC	2007	3B	IIB72AB	42	0	
IIB	8C-9A	MAC	2007	3B	NONE	39	0	
IIB	8C-9A	MAC	2007	3C	IIB72AB	88	0	
IIB	8C-9A	MAC	2007	3C	NONE	53	0	
IIB	8C-9A	MAC	2007	3T	NONE	43	0	
IIB	8C-9A	MAC	2007	NONE	NONE	40671	0	
IIB	8C-9A	MAC	2008	3A	IIB72AB	3401	0	
IIB	8C-9A	MAC	2008	3A	NONE	15346	0	
IIB	8C-9A	MAC	2008	3B	IIB72AB	84	0	
IIB	8C-9A	MAC	2008	3B	NONE	89	0	
IIB	8C-9A	MAC	2008	3C	IIB72AB	66	0	
IIB	8C-9A	MAC	2008	3C	NONE	38	0	
IIB	8C-9A	MAC	2008	3T	NONE	60	0	
IIB	8C-9A	MAC	2008	NONE	NONE	36933	0	
IIB	8C-9A	MAC	2009	3A	IIB72AB	5761	0	
IIB	8C-9A	MAC	2009	3A	NONE	18929	0	
IIB	8C-9A	MAC	2009	3B	IIB72AB	63	0	
IIB	8C-9A	MAC	2009	3B	NONE	55	0	
IIB	8C-9A	MAC	2009	3C	IIB72AB	179	0	
IIB	8C-9A	MAC	2009	3C	NONE	80	0	
IIB	8C-9A	MAC	2009	3T	NONE	68	0	
IIB	8C-9A	MAC	2009	NONE	NONE	64349	0	
IIB	8C-9A	NEP	2003	3A	IIB72AB	93	0	
IIB	8C-9A	NEP	2003	3A	NONE	181	0	
IIB	8C-9A	NEP	2003	3B	IIB72AB	0	0	
IIB	8C-9A	NEP	2003	3B	NONE	0	0	
IIB	8C-9A	NEP	2003	3C	IIB72AB	0	0	
IIB	8C-9A	NEP	2003	3C	NONE	0	0	
IIB	8C-9A	NEP	2003	3T	NONE	0	0	
IIB	8C-9A	NEP	2003	NONE	NONE	15	0	
IIB	8C-9A	NEP	2004	3A	IIB72AB	85	0	
IIB	8C-9A	NEP	2004	3A	NONE	134	0	
IIB	8C-9A	NEP	2004	3B	IIB72AB	0	0	
IIB	8C-9A	NEP	2004	3B	NONE	0	0	
IIB	8C-9A	NEP	2004	3C	IIB72AB	0	0	
IIB	8C-9A	NEP	2004	3C	NONE	0	0	
IIB	8C-9A	NEP	2004	3T	NONE	1	0	
IIB	8C-9A	NEP	2004	NONE	NONE	6	0	
IIB	8C-9A	NEP	2005	3A	IIB72AB	122	0	
IIB	8C-9A	NEP	2005	3A	NONE	152	0	
IIB	8C-9A	NEP	2005	3B	IIB72AB	0	0	
IIB	8C-9A	NEP	2005	3B	NONE	1	0	
IIB	8C-9A	NEP	2005	3C	IIB72AB	0	0	

Table 7.3.1 continued (V).

annex	area	species	year	gear	specon	landings	discards	
IIB	8C-9A	NEP	2005	3C	NONE	0	0	
IIB	8C-9A	NEP	2005	3T	NONE	2	0	
IIB	8C-9A	NEP	2005	NONE	NONE	19	0	
IIB	8C-9A	NEP	2006	3A	IIB72AB	16	0	
IIB	8C-9A	NEP	2006	3A	NONE	243	0	
IIB	8C-9A	NEP	2006	3B	IIB72AB	0	0	
IIB	8C-9A	NEP	2006	3B	NONE	2	0	
IIB	8C-9A	NEP	2006	3C	IIB72AB	0	0	
IIB	8C-9A	NEP	2006	3C	NONE	0	0	
IIB	8C-9A	NEP	2006	3T	NONE	2	0	
IIB	8C-9A	NEP	2006	NONE	NONE	9	0	
IIB	8C-9A	NEP	2007	3A	IIB72AB	21	0	
IIB	8C-9A	NEP	2007	3A	NONE	243	0	
IIB	8C-9A	NEP	2007	3B	IIB72AB	1	0	
IIB	8C-9A	NEP	2007	3B	NONE	1	0	
IIB	8C-9A	NEP	2007	3C	IIB72AB	0	0	
IIB	8C-9A	NEP	2007	3C	NONE	0	0	
IIB	8C-9A	NEP	2007	3T	NONE	0	0	
IIB	8C-9A	NEP	2007	NONE	NONE	11	0	
IIB	8C-9A	NEP	2008	3A	IIB72AB	20	0	
IIB	8C-9A	NEP	2008	3A	NONE	182	0	
IIB	8C-9A	NEP	2008	3B	IIB72AB	0	0	
IIB	8C-9A	NEP	2008	3B	NONE	0	0	
IIB	8C-9A	NEP	2008	3C	IIB72AB	0	0	
IIB	8C-9A	NEP	2008	3C	NONE	0	0	
IIB	8C-9A	NEP	2008	3T	NONE	0	0	
IIB	8C-9A	NEP	2008	NONE	NONE	16	0	
IIB	8C-9A	NEP	2009	3A	IIB72AB	16	0	
IIB	8C-9A	NEP	2009	3A	NONE	124	0	
IIB	8C-9A	NEP	2009	3B	IIB72AB	0	0	
IIB	8C-9A	NEP	2009	3B	NONE	0	0	
IIB	8C-9A	NEP	2009	3C	IIB72AB	0	0	
IIB	8C-9A	NEP	2009	3C	NONE	0	0	
IIB	8C-9A	NEP	2009	3T	NONE	0	0	
IIB	8C-9A	NEP	2009	NONE	NONE	13	0	
IIB	8C-9A	RAJ	2003	3A	IIB72AB	0	0	
IIB	8C-9A	RAJ	2003	3A	NONE	17	0	
IIB	8C-9A	RAJ	2003	3B	IIB72AB	16	0	
IIB	8C-9A	RAJ	2003	3B	NONE	1	0	
IIB	8C-9A	RAJ	2003	3C	IIB72AB	20	0	
IIB	8C-9A	RAJ	2003	3C	NONE	1	0	
IIB	8C-9A	RAJ	2003	3T	NONE	38	0	
IIB	8C-9A	RAJ	2003	NONE	NONE	28	0	
IIB	8C-9A	RAJ	2004	3A	IIB72AB	1	0	
IIB	8C-9A	RAJ	2004	3A	NONE	31	0	
IIB	8C-9A	RAJ	2004	3B	IIB72AB	9	0	
IIB	8C-9A	RAJ	2004	3B	NONE	5	0	
IIB	8C-9A	RAJ	2004	3C	IIB72AB	12	0	
IIB	8C-9A	RAJ	2004	3C	NONE	3	0	

Table 7.3.1 continued (V).

annex	area	species	year	gear	specon	landings	discards	
IIB	8C-9A	RAJ	2004	3T	NONE	69	0	
IIB	8C-9A	RAJ	2004	NONE	NONE	18	0	
IIB	8C-9A	RAJ	2005	3A	IIB72AB	4	0	
IIB	8C-9A	RAJ	2005	3A	NONE	34	0	
IIB	8C-9A	RAJ	2005	3B	IIB72AB	14	0	
IIB	8C-9A	RAJ	2005	3B	NONE	13	0	
IIB	8C-9A	RAJ	2005	3C	IIB72AB	14	0	
IIB	8C-9A	RAJ	2005	3C	NONE	2	0	
IIB	8C-9A	RAJ	2005	3T	NONE	98	0	
IIB	8C-9A	RAJ	2005	NONE	NONE	29	0	
IIB	8C-9A	RAJ	2006	3A	IIB72AB	5	0	
IIB	8C-9A	RAJ	2006	3A	NONE	57	0	
IIB	8C-9A	RAJ	2006	3B	IIB72AB	21	0	
IIB	8C-9A	RAJ	2006	3B	NONE	5	0	
IIB	8C-9A	RAJ	2006	3C	IIB72AB	16	0	
IIB	8C-9A	RAJ	2006	3C	NONE	3	0	
IIB	8C-9A	RAJ	2006	3T	NONE	128	0	
IIB	8C-9A	RAJ	2006	NONE	NONE	16	0	
IIB	8C-9A	RAJ	2007	3A	IIB72AB	24	0	
IIB	8C-9A	RAJ	2007	3A	NONE	85	0	
IIB	8C-9A	RAJ	2007	3B	IIB72AB	19	0	
IIB	8C-9A	RAJ	2007	3B	NONE	12	0	
IIB	8C-9A	RAJ	2007	3C	IIB72AB	26	0	
IIB	8C-9A	RAJ	2007	3C	NONE	5	0	
IIB	8C-9A	RAJ	2007	3T	NONE	196	0	
IIB	8C-9A	RAJ	2007	NONE	NONE	18	0	
IIB	8C-9A	RAJ	2008	3A	IIB72AB	26	0	
IIB	8C-9A	RAJ	2008	3A	NONE	117	0	
IIB	8C-9A	RAJ	2008	3B	IIB72AB	20	0	
IIB	8C-9A	RAJ	2008	3B	NONE	6	0	
IIB	8C-9A	RAJ	2008	3C	IIB72AB	187	0	
IIB	8C-9A	RAJ	2008	3C	NONE	5	0	
IIB	8C-9A	RAJ	2008	3T	NONE	174	0	
IIB	8C-9A	RAJ	2008	NONE	NONE	24	0	
IIB	8C-9A	RAJ	2009	3A	IIB72AB	28	0	
IIB	8C-9A	RAJ	2009	3A	NONE	259	0	
IIB	8C-9A	RAJ	2009	3B	IIB72AB	19	0	
IIB	8C-9A	RAJ	2009	3B	NONE	10	0	
IIB	8C-9A	RAJ	2009	3C	IIB72AB	47	0	
IIB	8C-9A	RAJ	2009	3C	NONE	4	0	
IIB	8C-9A	RAJ	2009	3T	NONE	246	0	
IIB	8C-9A	RAJ	2009	NONE	NONE	39	0	
IIB	8C-9A	WHB	2003	3A	IIB72AB	4436	0	
IIB	8C-9A	WHB	2003	3A	NONE	17236	0	
IIB	8C-9A	WHB	2003	3B	IIB72AB	0	0	
IIB	8C-9A	WHB	2003	3B	NONE	2	0	
IIB	8C-9A	WHB	2003	3C	IIB72AB	20	0	
IIB	8C-9A	WHB	2003	3C	NONE	11	0	
IIB	8C-9A	WHB	2003	3T	NONE	1	0	

Table 7.3.1 continued (V).

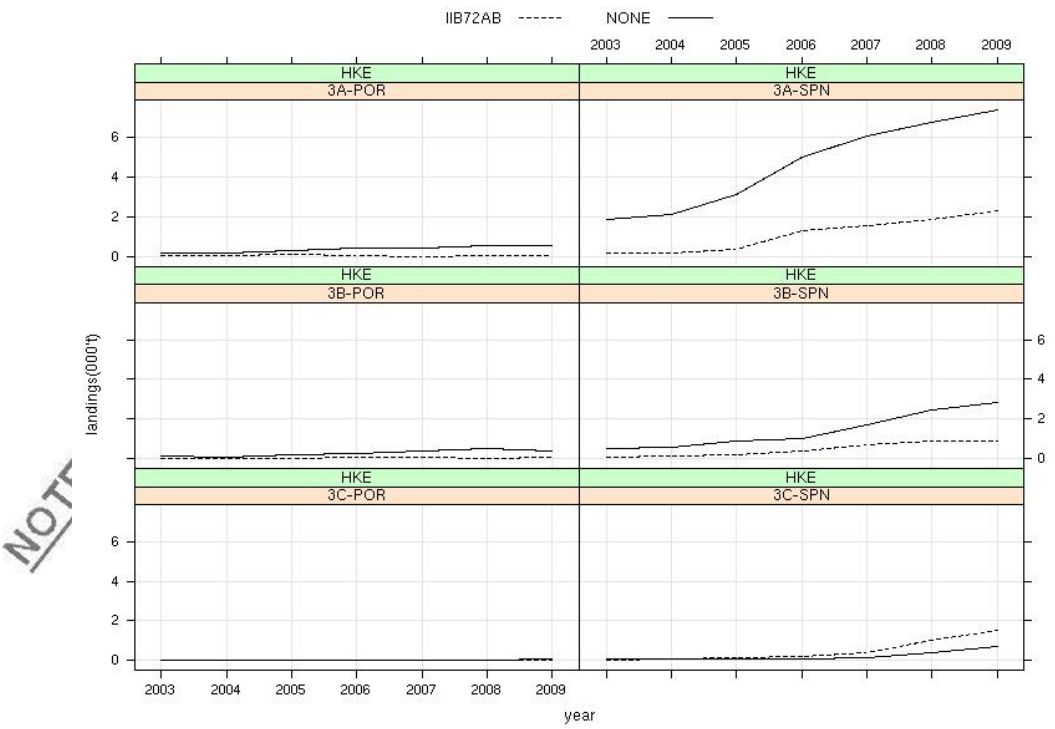
annex	area	species	year	gear	specon	landings	discards	
IIB	8C-9A	WHB	2003	NONE	NONE	255	0	
IIB	8C-9A	WHB	2004	3A	IIB72AB	5843	0	
IIB	8C-9A	WHB	2004	3A	NONE	21556	0	
IIB	8C-9A	WHB	2004	3B	IIB72AB	2	0	
IIB	8C-9A	WHB	2004	3B	NONE	3	0	
IIB	8C-9A	WHB	2004	3C	IIB72AB	17	0	
IIB	8C-9A	WHB	2004	3C	NONE	18	0	
IIB	8C-9A	WHB	2004	3T	NONE	1	0	
IIB	8C-9A	WHB	2004	NONE	NONE	109	0	
IIB	8C-9A	WHB	2005	3A	IIB72AB	7035	0	
IIB	8C-9A	WHB	2005	3A	NONE	20898	0	
IIB	8C-9A	WHB	2005	3B	IIB72AB	41	0	
IIB	8C-9A	WHB	2005	3B	NONE	1	0	
IIB	8C-9A	WHB	2005	3C	IIB72AB	18	0	
IIB	8C-9A	WHB	2005	3C	NONE	1	0	
IIB	8C-9A	WHB	2005	3T	NONE	4	0	
IIB	8C-9A	WHB	2005	NONE	NONE	90	0	
IIB	8C-9A	WHB	2006	3A	IIB72AB	4482	0	
IIB	8C-9A	WHB	2006	3A	NONE	17071	0	
IIB	8C-9A	WHB	2006	3B	IIB72AB	0	0	
IIB	8C-9A	WHB	2006	3B	NONE	1	0	
IIB	8C-9A	WHB	2006	3C	IIB72AB	14	0	
IIB	8C-9A	WHB	2006	3C	NONE	3	0	
IIB	8C-9A	WHB	2006	3T	NONE	3	0	
IIB	8C-9A	WHB	2006	NONE	NONE	217	0	
IIB	8C-9A	WHB	2007	3A	IIB72AB	4354	0	
IIB	8C-9A	WHB	2007	3A	NONE	16683	0	
IIB	8C-9A	WHB	2007	3B	IIB72AB	1	0	
IIB	8C-9A	WHB	2007	3B	NONE	1	0	
IIB	8C-9A	WHB	2007	3C	IIB72AB	9	0	
IIB	8C-9A	WHB	2007	3C	NONE	9	0	
IIB	8C-9A	WHB	2007	3T	NONE	1	0	
IIB	8C-9A	WHB	2007	NONE	NONE	520	0	
IIB	8C-9A	WHB	2008	3A	IIB72AB	4722	0	
IIB	8C-9A	WHB	2008	3A	NONE	17126	0	
IIB	8C-9A	WHB	2008	3B	IIB72AB	1	0	
IIB	8C-9A	WHB	2008	3B	NONE	3	0	
IIB	8C-9A	WHB	2008	3C	IIB72AB	10	0	
IIB	8C-9A	WHB	2008	3C	NONE	4	0	
IIB	8C-9A	WHB	2008	3T	NONE	0	0	
IIB	8C-9A	WHB	2008	NONE	NONE	351	0	
IIB	8C-9A	WHB	2009	3A	IIB72AB	5103	0	
IIB	8C-9A	WHB	2009	3A	NONE	20392	0	
IIB	8C-9A	WHB	2009	3B	IIB72AB	1	0	
IIB	8C-9A	WHB	2009	3B	NONE	0	0	
IIB	8C-9A	WHB	2009	3C	IIB72AB	15	0	
IIB	8C-9A	WHB	2009	3C	NONE	11	0	
IIB	8C-9A	WHB	2009	3T	NONE	1	0	
IIB	8C-9A	WHB	2009	NONE	NONE	363	0	

Figure 7.3.1 shows landings of hake, *Nephrops* and anglerfish by Member State and derogation. Table 7.3.2 summarizes the major gears catching each species, the three species combined and the percentage of landings caught by vessels under effort control.

Table 7.3.2. Fleets that fish hake, *Nephrops* and anglerfish landings (2007-2009 average).

SPECIES	% LANDINGS	FLEET	% LANDING UNDER EFFORT RESTRICTIONS
HKE+NEP+ANF	56	SPN-3A	78
HKE	58	SPN-3A	78
HKE	21	SPN-3B	74
HKE	9	SPN-3C	30
NEP	55	POR-3A	98
ANF	63	SPN-3A	79

Taking into account only these three species, the Spanish regulated trawlers (SPN-3A) are the main participants in this fishery (56% of landings between 2007 and 2009) (Table 7.3.2). 78% of hake, *Nephrops* and anglerfish landings from Spanish regulated trawlers (SPN-3A) were made by fleet under effort restrictions ("none", solid line) (07-09 average).



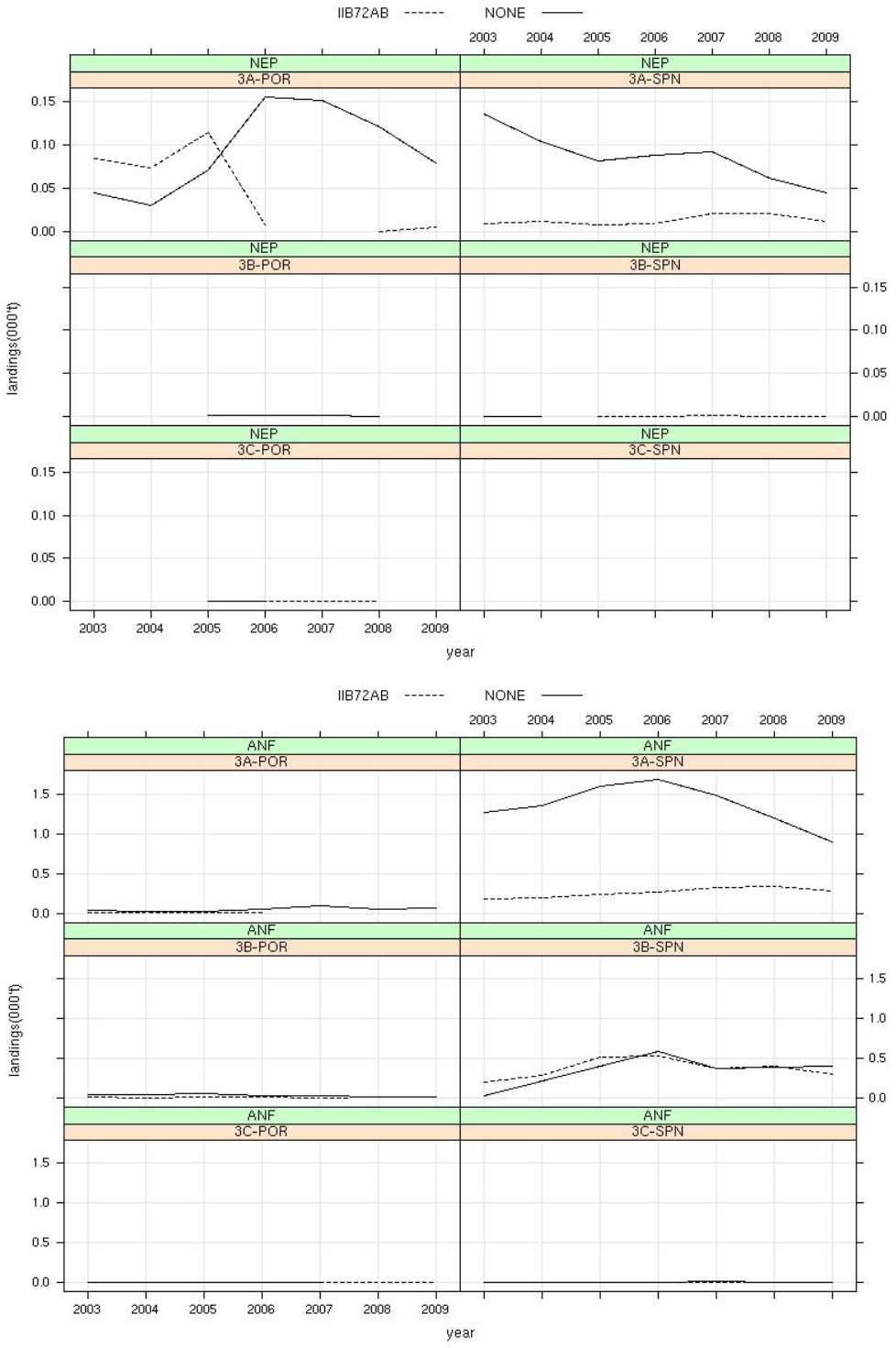


Fig. 7.3.1 Trends in landings of hake, Nephrops and anglerfish by Member State.

The data given in the Table 7.3.1 form the basis of the Figure 7.3.2 displaying the relative catch compositions by derogations for the years 2003-2009. The lack of shaded bars (representing discards) further indicates that discard data were not provided.

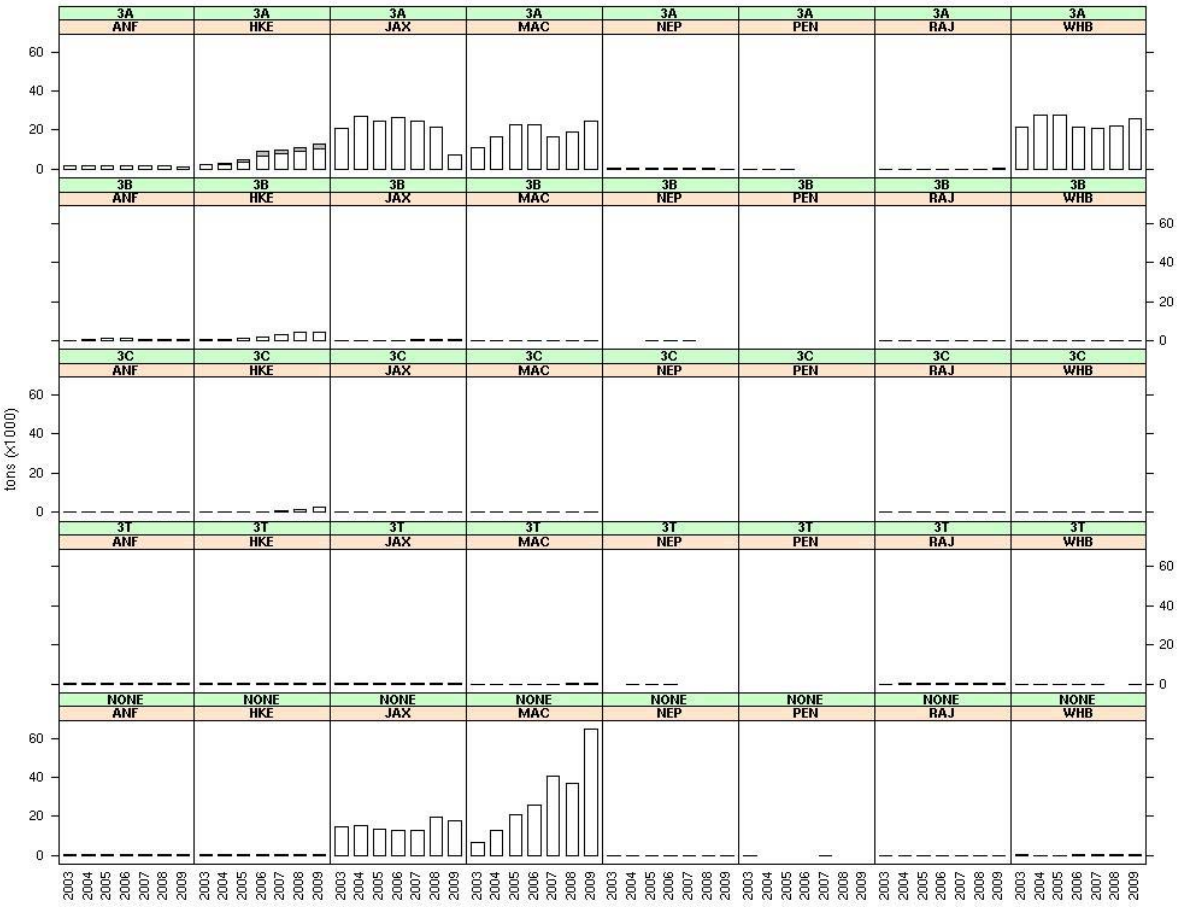


Figure 7.3.2 Relative catch compositions by derogations for the years 2003-2009.

Most of hake catch comes from regulated trawlers (3A), which also take high quantities of horse mackerel, mackerel and blue whiting (Figure 7.3.2). The main species in unregulated gears (NONE) is mackerel and horse mackerel. Gillnets and longlines also show a higher percentage of hake on their catch composition.

7.4. Trend in CPUE of hake

Regulated gears generally shown an increase of CPUE (Figure 7.4.1), which is consistent with the increase in hake SSB computed by ICES WGHMM 2010. Gillnets show a small decrease in 2009. Trammel nets and other unregulated gears do not show such increase which is to be expected once that these fleets targets other species than hake.

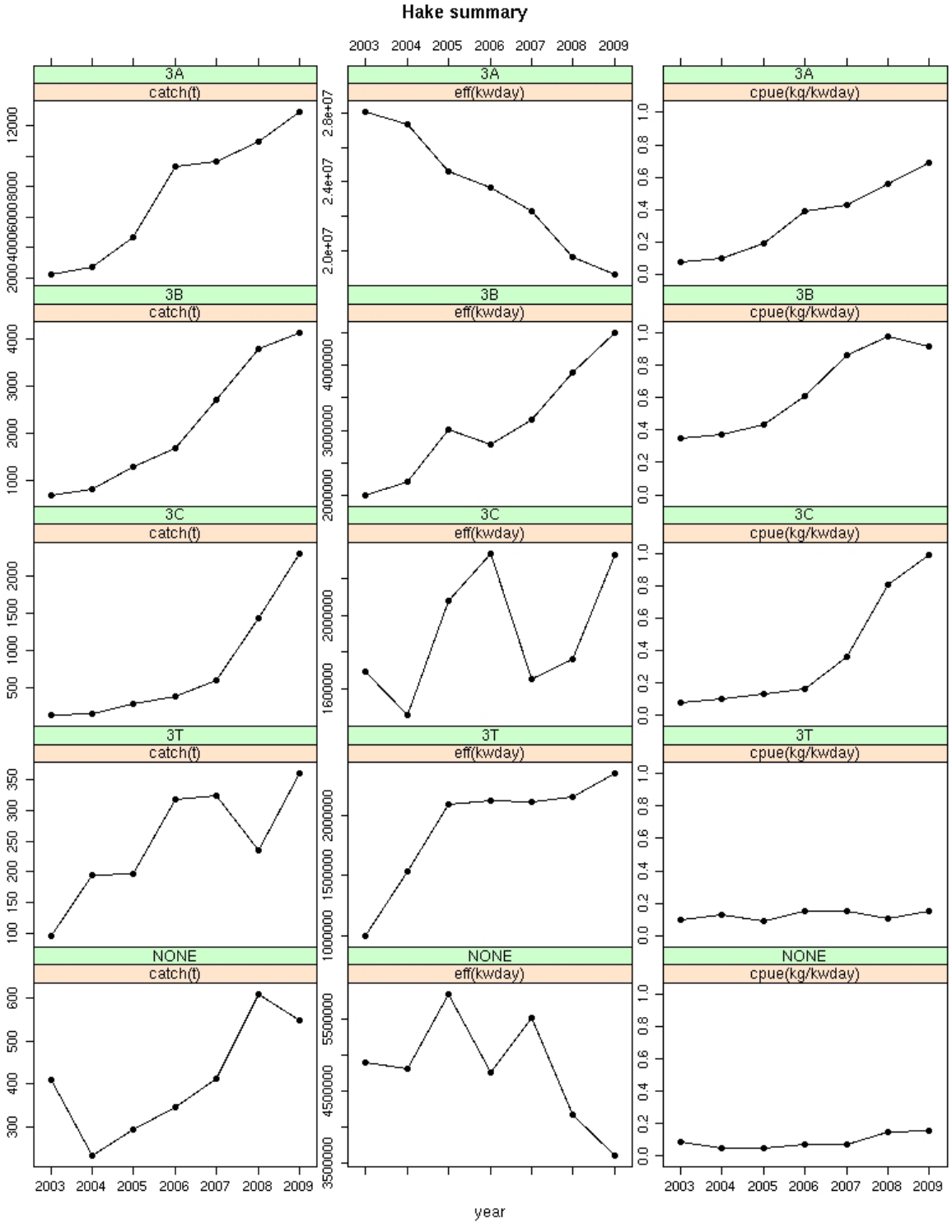


Figure 7.4.1. Hake catch (t), effort (kw*day) and CPUE (t/[kw*day]) by gear (2003-2009).

7.5. Ranked derogations according to relative contributions to hake and Nephrops catches

Regarding the catches of hake, Nephrops and anglerfish (Table 7.5.1), the majority of the catches comes from vessels using regulated gears. 3a gear is by far the most important.

Table 7.5.1. Ranked catches of hake, nephrops and anglerfish by derogation (2003-2009).

ANNEX	REG_AREA	SPECIES	REG_GEAR	2003 Rel	2004 Rel	2005 Rel	2006 Rel	2007 Rel	2008 Rel	2009 Rel
IIb	8c-9a	HKE	3a	0.62	0.77	0.82	0.78	0.81	0.71	0.77
IIb	8c-9a	HKE	3b	0.2	0.14	0.12	0.14	0.13	0.19	0.13
IIb	8c-9a	HKE	3c	0.04	0.02	0.02	0.03	0.03	0.07	0.07
IIb	8c-9a	HKE	3t	0.03	0.03	0.02	0.03	0.01	0.01	0.01
IIb	8c-9a	HKE	GILL	0.04	0.03	0.02	0.02	0.01	0.01	0.01
IIb	8c-9a	HKE	OTTER	0.01	0	0	0	0	0.01	0
IIb	8c-9a	HKE	BEAM	0	0	0	0	0	0	0
IIb	8c-9a	HKE	POTS	0	0	0	0	0	0	0
IIb	8c-9a	HKE	PEL_SEINE	0.05	0	0	0	0	0	0
IIb	8c-9a	HKE	none	0.02	0.01	0	0	0	0	0
IIb	8c-9a	HKE	DEM_SEINE				0	0	0	0
IIb	8c-9a	HKE	DREDGE							0
IIb	8c-9a	HKE	PEL_TRAWL						0	
IIb	8c-9a	NEP	3a	0.95	0.97	0.93	0.96	0.96	0.93	0.92
IIb	8c-9a	NEP	POTS	0.03	0.01	0.06	0.03	0.03	0.07	0.08
IIb	8c-9a	NEP	GILL	0		0	0	0	0	0
IIb	8c-9a	NEP	OTTER	0.01	0.01	0	0	0.01	0	0
IIb	8c-9a	NEP	none	0.01	0	0	0	0	0	0
IIb	8c-9a	NEP	3t	0	0	0.01	0	0	0	0
IIb	8c-9a	NEP	3b	0	0	0	0.01	0	0	0
IIb	8c-9a	NEP	PEL_SEINE	0	0	0				
IIb	8c-9a	NEP	3c	0		0	0	0	0	
IIb	8c-9a	NEP	BEAM	0						
IIb	8c-9a	ANF	3a	0.7	0.57	0.52	0.52	0.59	0.56	0.49
IIb	8c-9a	ANF	3b	0.12	0.2	0.27	0.29	0.24	0.28	0.29
IIb	8c-9a	ANF	3t	0.08	0.14	0.1	0.08	0.08	0.08	0.11
IIb	8c-9a	ANF	GILL	0.07	0.07	0.09	0.07	0.05	0.06	0.07
IIb	8c-9a	ANF	PEL_SEINE	0	0	0	0	0	0	0.01
IIb	8c-9a	ANF	OTTER	0.02	0.01	0.01	0.01	0.01	0.01	0.01
IIb	8c-9a	ANF	none	0.01	0.01	0	0.03	0.02	0.01	0.01
IIb	8c-9a	ANF	DREDGE							0
IIb	8c-9a	ANF	DEM_SEINE					0		0
IIb	8c-9a	ANF	3c	0	0	0	0	0	0	0
IIb	8c-9a	ANF	POTS	0	0	0	0	0	0	0
IIb	8c-9a	ANF	BEAM	0	0	0	0	0	0	0
IIb	8c-9a	ANF	PEL_TRAWL						0	

7.6. Unregulated gears

Spanish unregulated gears (SPN-NONE) deploy 34% of the effort in the area. Figure 7.2.2 shows the proportional breakdown of the Spanish unregulated gears (SPN-NONE) (2007-2009 average), 53%

corresponds to pelagic seine, 30% to troll (tuna) and hand (mackerel) lines, 9% to pots and 6% to gillnet with unregulated or unknown mesh sizes. Portuguese unregulated gears deploy a residual effort on the area.

7.7. Sampling plans, fishing effort and catches (landings and discards) of hake, Nephrops and associated species of vessels <10m

Both countries did not provide data for vessels below 10 m. In common with other parts of the effort management Annex, Annex IIB does not include this fleet. However, future information on this sector would be valuable or determining what sort of contribution smaller vessels make to the mortality of the key species covered by the regulation.

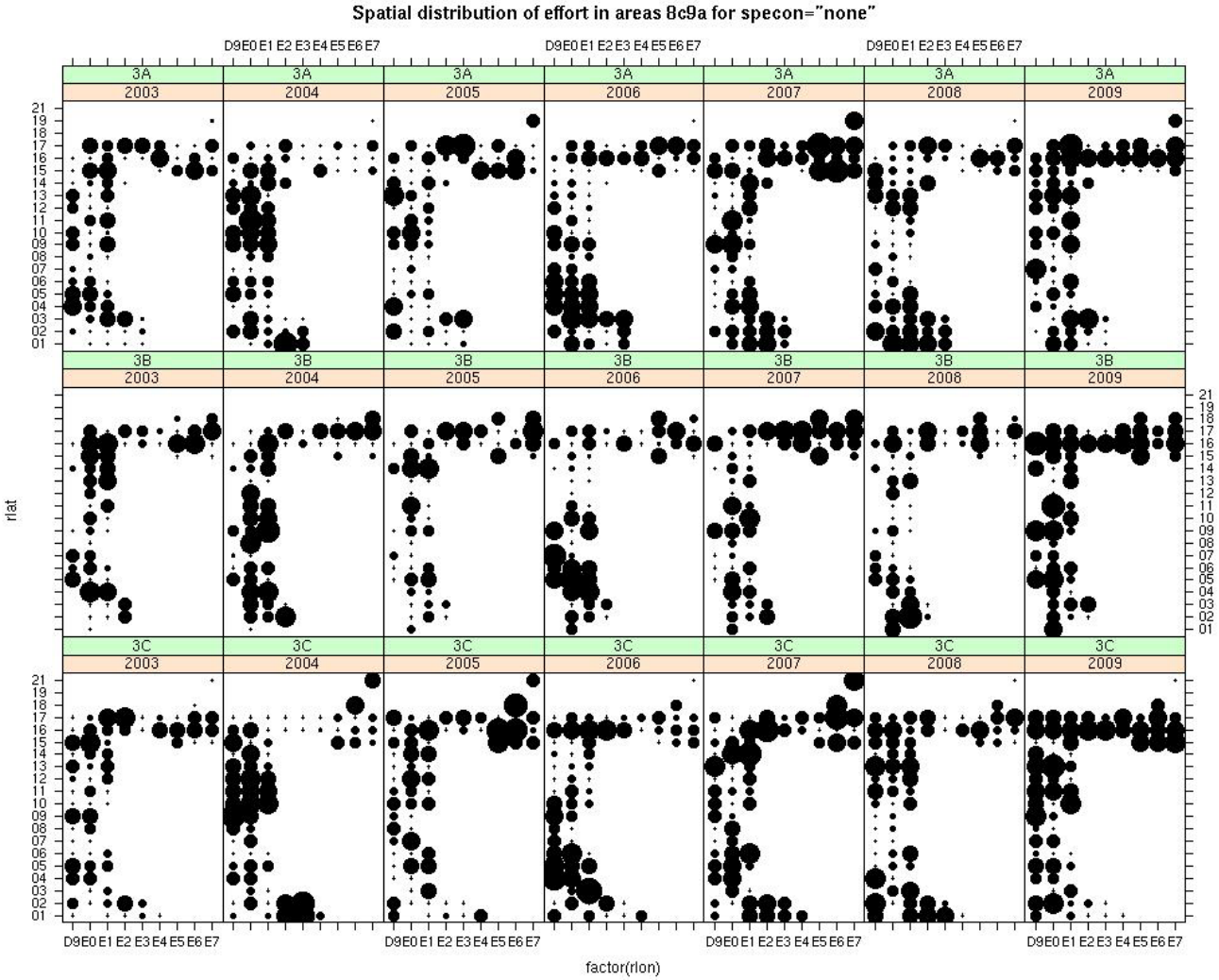
Since 2003 Portugal has carried out a specific sampling plan to collect data on the activity of the small scale fleet (<10m vessels) operating in continental waters. The data is collected with a stratified random strategy by skippers' interviews, and provides information about catches by species and effort. This sampling plan is under the scope of Reg.(EC) 1639/2001 and the results were presented on the annual reports requested by the DGMARE.

7.8. Spatial distribution patterns of effective fishing effort of trawled gears 2003-2009

Portugal and Spain submitted effort by ICES rectangle. Figure 7.8.1 shows the distribution of effort for regulated gears, with effort control ("none") and without effort restriction ("IIB72ab").

The information shows inconsistencies over time and gaps in spatial coverage. Such problems are due to a low coverage of Portuguese logbooks and unidentified problems in the Spanish dataset, which have to be tackled in the future.

On the other hand, in Figure 7.8.1 all the Spanish longline effort was allocated by mistake to specon "none".



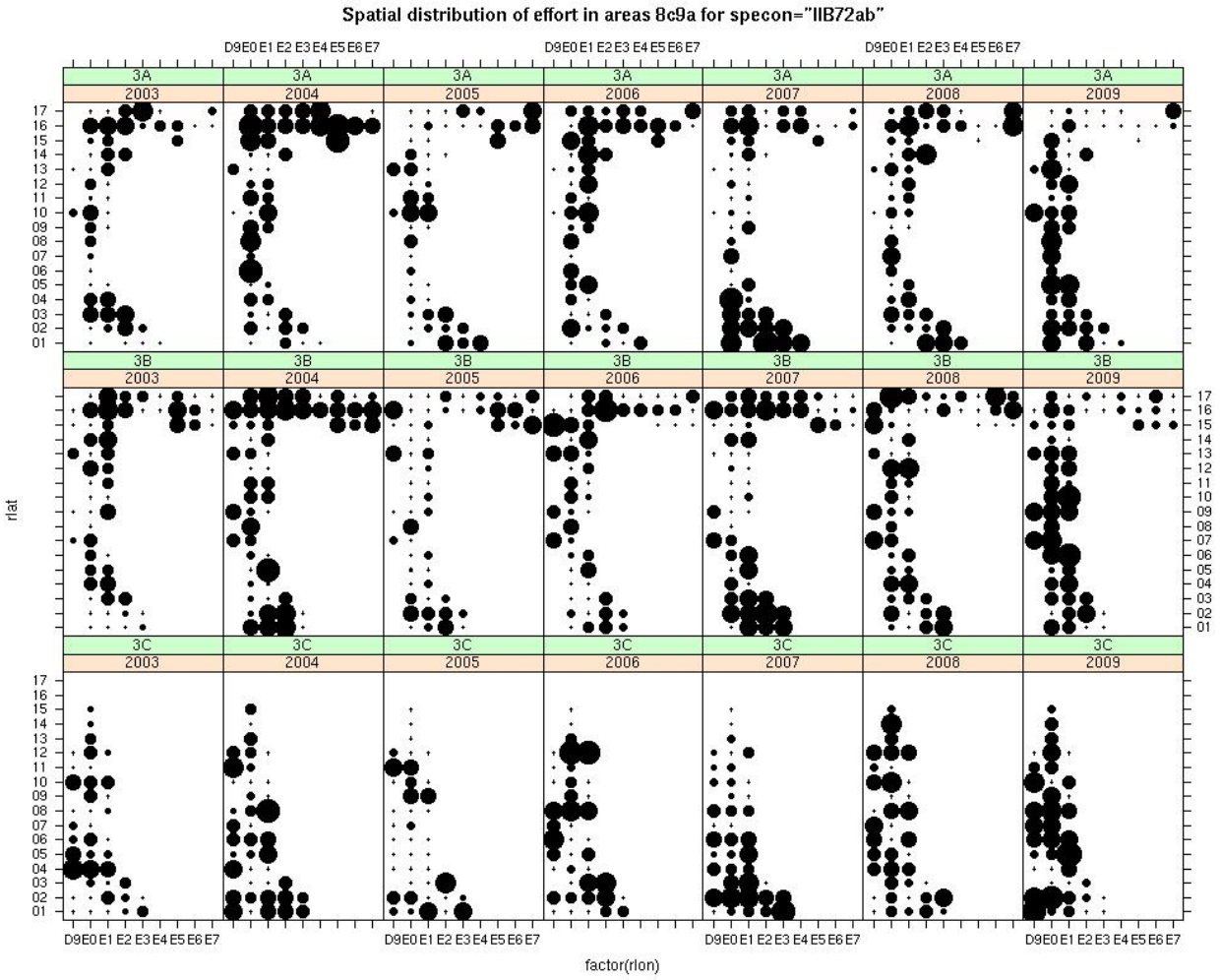


Figure 7.8.1 shows the distribution of effort for regulated gears with effort control (specon "none") and without effort restriction ("IIB72ab"). All the Spanish longline effort was allocated by mistake to specon "none".

7.9. Some questions from SGMOS to data providers

SGMOS invited the data providers to clarify some issues after the SGMOS 10-04 meeting in order to allow a better analysis of the information provided. A synthesis of the responses is provided in Section 5 of the report. Since these questions are fundamental to this chapter's review, the replies are also included below.

1) How was defined days-at-sea, calendar days, 24h periods or other methodology?

PORTUGAL: A Day-at-sea is a continuous period of 24 hours (or a fraction of this period) where the vessel is outside port. Days at sea was computed in a trip basis, rounding by excess the number of days of the trip to a whole number.

SPAIN: Calendar days

2) Effort was computed:

2.1) For all fishing activity in areas 8c-9a or for a subset, e.g. demersal gears, trips landing hake, etc?

PORTUGAL: Effort was computed trip by trip, analyzing gears used and in which areas.

SPAIN: Effort was computed for all fishing activity in areas 8c-9a for the Type of Fishing Techniques from the Appendix 2 of the data requirement (beam trawl, bottom trawl, Danish & Scottish seiners, pelagic trawl, pelagic seiner & purse seiner, dredges, longlines, drift & fixed nets except trammel nets, trammel nets and pots & traps). That is almost all the fishing activity of the area; the only gears that are not included are some specific of the tuna fishing. All the trips were selected, with and without landings of hake.

Was this subset similar for all years or it changed along the time series?

PORTUGAL: The same method was used for all the years.

SPAIN: The subset was the same for all years (2002-2009).

2.2) Based on which source information, logbooks, sales, VMS, a mixture of all?

PORTUGAL: The source for information for all the data sent to SGMOS regarding vessels > 10m was the logbook. It was necessary to use that source of information considering all the detail we have to provide (area, gear, mesh size range). Auction and VMS data is used only for control and reliability.
The use of logbooks creates and issue related to the lack of logbooks recorder in our database, for years previous to 2005. As a consequence of this, bias will occur, making impossible to make reliable assessments on the evolution of effort for those years.

We stress that the use of different methodologies used to provide data to SG-MOS is not the same methodology used to obtain the number of days at sea reported annually to the Comission. This difference is justified by the detail of the data that SG-MOS requests and that is not compatible with the simple cross of data of logbooks/VMS/sales used in the second case.
We are currently working on a solution to this problem and until then any analysis of evolution of effort under the recovery plan for southern hake must have this bias in consideration.

SPAIN: Only logbooks.

3) On which basis is a trip allocated to controlled effort (code "none") or effort under special conditions (code "IIB72ab")?

PORTUGAL: A trip is allocated to controlled effort if the vessel is in the list of vessels with restrictions in their activity, under the regulation and it is made in a regulated area with regulated gears. It is considered

special condition if the vessel doesn't belong to the previous group and has catches according the special conditions, in regulated areas and with regulated gears. To achieve this goal a separate analysis is made to all the vessels prior to the allocation of trips.

SPAIN: In the first sending "none" was written in all the trips from vessels that fish in 8c and 9a except Gulf of Cádiz that fished more than "5000" kilograms of hake or more than 2500 kg of Norway lobster in 2002 or in 2003. That sending includes A and B files (catch and effort). That was a mistake, because the category of "none"/"IIB72ab" must be define also by the regulated gear and mesh size, not only by the vessel landings. This was corrected by the members of SGMOS regimen effort meeting according to the Spanish team.
In the second sending (C file, effort by statistic rectangles) the "none" was written in the trips from vessels that that fish in 8c and 9a except Gulf of Cádiz that fished more than "5000" kilograms of hake or more than 2500 kg of Norway lobster in 2002 or in 2003 and in the trips with less kilograms but from not regulated gears and/or mesh sizes.

4) How was effort allocated when activity in a trip occurs in more than one area or uses more than one gear.

PORTUGAL: In this case we allocated the effort to both areas/gears. We have estimations that this issue increases effort by approximately 5%. We know that this is an issue that has been discussed in many international meetings and a solution has never been achieved. Possibly, in our next revision of the data, a solution will be adopted that will allocate the effort to just one gear / area.

SPAIN: The file B (effort) was made from the "landing" database of logbooks. In this database we have only one area and one gear by trip. The file C (effort by rectangle) was made from the "catches" database of logbooks. In this database we have a row day by day with several variables (day, number of fishing operations, fishing hours, statistical rectangle, species, number of kilograms, …), among them gear and ICES division. If the vessel change the gear or pass to other ICES division or to other rectangle they start a new row. When we prepared the C file we simply add the fishing hours by the parameters of the requirement.

8. REVIEW OF ANNEX IIC OF REGULATION 53/2010 IN THE CONTEXT OF THE RECOVERY OF WESTERN CHANNEL SOLE (PROPOSAL COM (2003) 819 FINAL)

8.1. General considerations regarding the derogations and special conditions

STECF-SGMOS notes that assignment of derogations and special conditions is based on best expert knowledge. Data errors may exist regarding the huge data bases and the special knowledge required to deal with them (grouping and exact formulation of data queries).

STECF-SGMOS noted three years ago a change in Annexes IIC to Council Reg. 41/2007 for 2007 as compared to the Annex IIC to 51/2006 which removed the special conditions IIC71a and IIC71b to static nets <220mm (3b) . STECF-SGMOS further notes that there were no special derogations added to Annex IIC of Council Reg. 40/2008, Annex IIC of Council Reg. 43/2009 or Annex IIC of Council Reg. 53/2010.

The following Table 8.1.1 lists the historic developments of days at sea by vessel and derogations.

Table 8.1.1 – Western Channel - Historic trends in days at sea by vessel specified in the Council Regulations since 2005.

Annex	AREA	REG GEAR	SPECON	2003	2004	2005	2006	2007	2008	2009	2010
IIc	7e	3a	none			240	216	192	192	192	164
IIc	7e	3b	none			240	216	192	192	192	164
IIc	7e	3b deleted	ICC71ab				365				

8.2. Trend in effort 2000-2009 by derogation and by Member State

The dominating fleet from the 2 existing derogations in 7e (3a and 3b) is by far the English beam trawl fleet with percentages in excess of 43% of the effort deployed (Table 8.2.1 and Figure 8.2.1 and 8.2.2). The other fleets involved are the French static gear fleet with around 20% of the deployed effort and the Belgian beam trawl fleet with an increasing trend from less then 1% in 2000 up to about 15% in 2007 followed by a decrease to 13% and 10% in 2008 and 2009 respectively. STECF-SGMOS however notes that about 82% of the overall effort deployed could not be allocated to regulated gear (e.g. because of lack of mesh size information, and also gears outside the regulation such as otter- and pelagic trawls). The "total" trend in Figure 8.2.1 is therefore highly influenced by the none regulated gear group. There is an overall downward trend in both the beam trawl fleet and the static gear in the last few years. The composition of the unregulated gears can be found in section 8.6. Figure 8.2.3 shows the trends for all the unregulated gear in area VIIe.

As data problems were discovered with the French effort information for 2002 (the problem is now understood and acknowledged), STECF-SGMOS decided only to provide effort trends graphically starting from 2003.

The difference between the data provided in 2009 and 2010 is shown in Table 8.2.2 as a percentage. A positive value should be interpreted as a higher value in 2010 compared to 2009 where a negative value means that the 2010 data is lower than the 2009 value. The main differences are apparent for the French fleets. It should be noted that all the French data series was revised substantially in 2010 as new calculating methods have been introduced. Details are described in section 5.

The effort deployed in Gross tonnage days (GTdays) and number of vessels are not described in this report but can be found on the STECF SGMOS 10-05 website under the Final Report section: https://stecf.jrc.ec.europa.eu/meetings/2010?p_p_id=62_INSTANCE_Hk1G&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&p_p_col_id=column-2&p_p_col_count=1&_62_INSTANCE_Hk1G_struts_action=%2Fjournal_articles%2Fview&_62_INSTANCE_Hk1G_groupId=43805&_62_INSTANCE_Hk1G_articleId=44677&_62_INSTANCE_Hk1G_version=1.0

The trends in the nominal effort of the 2 derogations (3a and 3b) are illustrated in Table 8.2.3. As data problems were discovered with the French effort information for 2002, STECF-SGMOS decided to take 2003 as the reference year. The beam trawl fleets decreased moderately from 14% above the 2003 level in 2004 to 9% above that level in 2007. In the last 2 years a sharp decrease has been observed from -6% below the 2003 level in 2008 to -29% in 2009. Also the static gear effort dropped substantially in the last 4 years from 9% above the 2003 level in 2006 to -44% in 2009. A substantial relative change in the last year is only observed for the beam trawl fleet (-24%).

Table 8.2.1 – Western Channel - Trend in nominal effort (kW*days at sea) by existing derogations given in Table 1 of Annex IIC (Coun. Reg. 53/2010) and Member State, 2000-2009. Derogations are sorted by gear, special condition (SPECON), and country. Data qualities are summarised in Section 5 of the report.

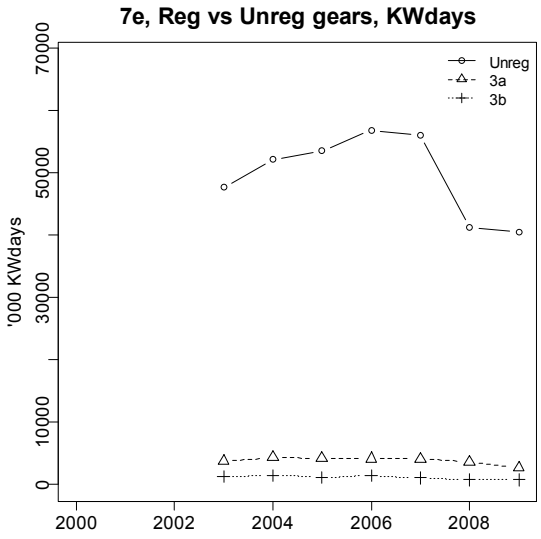
ANNEX	REG AREA	REG GEAR COD	SPECON	COUNTRY	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
IIc	7e	3a	none	BEL	20996	62198	138893	211491	554052	580016	565875	746016	523586	358399
IIc	7e	3a	none	ENG	2576121	3030424	2907916	3374514	3206806	3227096	3283897	3021075	2870177	2197118
IIc	7e	3a	none	FRA	19608	101143	195764	45086	317275	261700	289867	320576	146443	138669
IIc	7e	3a	none	GBJ	90183	171795	151338	122867	209969	121139				
IIc	7e	3a	none	IRL				23606	34577	16518	6474	16610	2143	442
IIc	7e	3a	none	NED	14710									
IIc	7e	3a	none	SCO								3866		1396
IIc	**7e**	**3a Total**	**none**		**2721618**	**3365560**	**3393911**	**3777564**	**4322679**	**4206469**	**4146113**	**4107943**	**3542319**	**2696024**
IIc	7e	3b	none	ENG	272583	355504	265270	323618	206294	178818	153434	103278	104187	104045
IIc	7e	3b	none	FRA	237403	343445	3075398	956465	1236654	946127	1236595	920004	615534	611990
IIc	7e	3b	none	SCO							1215	3240	9315	2430
IIc	**7e**	**3b Total**	**none**		**509986**	**698949**	**3340668**	**1280083**	**1442948**	**1124945**	**1391244**	**1026522**	**729036**	**718465**
IIc	7e	none	none	BEL					4338	6638	14046	12085	34143	106007
IIc	7e	none	none	DEN	163914	328052	224210	190190	1424	46389	102713	31213	88637	17994
IIc	7e	none	none	ENG	4714059	4210059	4038275	3797681	4177419	4262278	4138665	4149225	3717287	4080660
IIc	7e	none	none	FRA	8864752	11020233	59360050	14854853	17093208	17780680	19456045	19370589	12637420	12553428
IIc	7e	none	none	GBG	124892	149729	43044		75868	57128	45780	57710	26194	36366
IIc	7e	none	none	GBJ	186417	148492	106420	57884	1476	6745	19360	30580	25740	31020
IIc	7e	none	none	GER	267076	207404	133473	94385	106234	92768	29865		36994	21196
IIc	7e	none	none	IOM	13000	21138	16978				19902	1116	778	
IIc	7e	none	none	IRL	498807	151078	151015	202543	347507	152539	3880	23340	1023	14228
IIc	7e	none	none	NED	1895518	1805343	575630	1008710	449855	632891	956066	894614	1073200	801327
IIc	7e	none	none	NIR					1302					
IIc	7e	none	none	SCO	856787	744381	775375	705195	607935	691419	585805	595030	606253	674277
IIc	**7e**	**none Total**	**none**		**17585222**	**18785909**	**65425370**	**20911441**	**22866656**	**23729475**	**25372127**	**25165502**	**18247669**	**18336503**
IIc	**7e**	**Grand Total**	**none**		**20816826**	**22850418**	**72159949**	**25969088**	**28632283**	**29060889**	**30909484**	**30299967**	**22519024**	**21750992**

Table 8.2.2 – Western Channel – Percentage difference in effort (kW*days at sea) by existing derogations given in Table 1 of Annex IIC (Coun. Reg. 53/2010) and Member State, 2000-2008 between the data provided in 2009 and 2010. Derogations are sorted by gear, special condition (SPECON), and country. Data qualities are summarised in section 5.

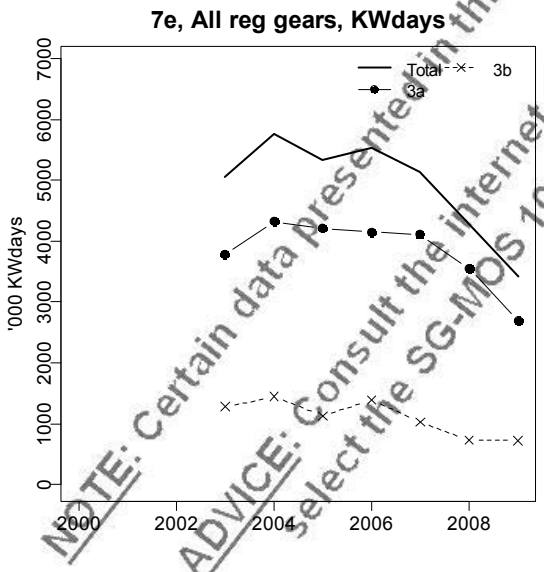
ANNEX	REG ARE/	REG GEAI	SPECON	COUNTRY	2000	2001	2002	2003	2004	2005	2006	2007	2008
IIc	7e	3a	none	BEL	0%	0%	0%	0%	1%	0%	0%	0%	0%
IIc	7e	3a	none	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	3a	none	FRA	2318%	132%	1033%	29%	110%	74%	196%	130%	-8%
IIc	7e	3a	none	GBJ	0%	0%	0%	0%	0%	2%	0%	0%	0%
IIc	7e	3a	none	IRL	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	3a	none	NED	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	3a	none	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	3b	none	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	3b	none	FRA	299%	175%	733%	129%	147%	78%	314%	392%	108%
IIc	7e	3b	none	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	BEAM	none	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	BEAM	none	FRA	0%	0%	0%	418%	236%	0%	85%	0%	0%
IIc	7e	BEAM	none	GBJ	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	BEAM	none	IRL	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	BEAM	none	NED	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	DEM_SEIN	none	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	DEM_SEIN	none	NED	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	DEM_SEIN	none	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	DREDGE	none	BEL	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	DREDGE	none	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	DREDGE	none	FRA	431%	655%	5460%	1592%	1435%	1331%	3137%	1277%	1010%
IIc	7e	DREDGE	none	GBJ	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	DREDGE	none	IOM	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	DREDGE	none	IRL	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	DREDGE	none	NED	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	DREDGE	none	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	GILL	none	BEL	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	GILL	none	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	GILL	none	FRA	174%	103%	497%	102%	73%	251%	180%	498%	197%
IIc	7e	GILL	none	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	LONGLINE	none	DEN	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	LONGLINE	none	ENG	0%	0%	0%	0%	0%	0%	0%	0%	4%
IIc	7e	LONGLINE	none	FRA	465%	292%	2732%	383%	474%	499%	1247%	2429%	360%
IIc	7e	LONGLINE	none	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	none	none	FRA	811%	2492%	3168%	373%	39%	100%	213%	331%	193%
IIc	7e	OTTER	none	BEL	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	OTTER	none	DEN	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	OTTER	none	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	OTTER	none	FRA	-44%	-39%	132%	-33%	-37%	-45%	-27%	-21%	-37%
IIc	7e	OTTER	none	GBG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	OTTER	none	GBJ	0%	0%	0%	0%	0%	-22%	-31%	-27%	-25%
IIc	7e	OTTER	none	IRL	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	OTTER	none	NED	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	OTTER	none	NIR	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	OTTER	none	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	PEL_SEIN	none	FRA	0%	52921%	0%	537162%	29541%	0%	0%	20765%	0%
IIc	7e	PEL_TRAV	none	DEN	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	PEL_TRAV	none	ENG	0%	0%	0%	0%	0%	0%	0%	0%	7%
IIc	7e	PEL_TRAV	none	FRA	470%	5701%	13105%	6009%	12186%	3552%	4859%	6755%	5148%
IIc	7e	PEL_TRAV	none	GBG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	PEL_TRAV	none	GER	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	PEL_TRAV	none	IRL	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	PEL_TRAV	none	NED	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	PEL_TRAV	none	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	POTS	none	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	POTS	none	FRA	40513%	27594%	50643%	26243%	13180%	13558%	47555%	76614%	12864%
IIc	7e	POTS	none	GBG	0%	0%	0%	0%	0%	0%	0%	0%	-10%
IIc	7e	POTS	none	GBJ	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	POTS	none	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	TRAMMEL	none	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
IIc	7e	TRAMMEL	none	FRA	93%	10%	306%	118%	-2%	101%	102%	157%	33%

Table 8.2.3 – Western Channel - Trend in nominal effort (kW*days at sea) by derogations given in Table 1 of Annex IIC (Coun. Reg. 53/2010), 2000-2009. Derogations are sorted by gear and special condition (SPECON). Data qualities are summarised in section 5.

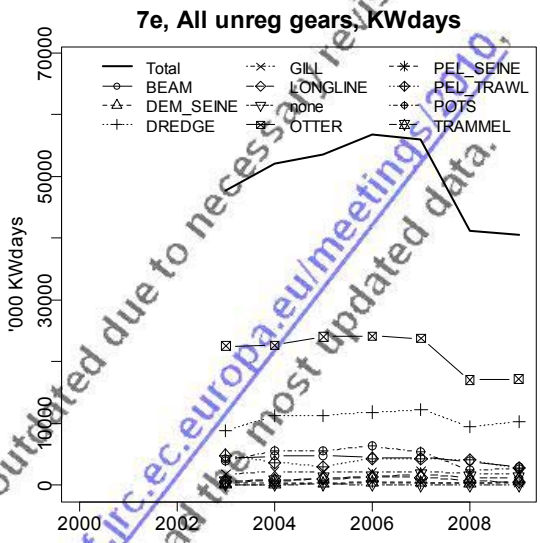
ANNEX	REG ARE/	REG GEAR COD	SPECON	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Rel. Change to 03	Rel. Change to 08
IIc	7e	3a	none	2721618	3365560	3393911	3777564	4322679	4206469	4146113	4107943	3542319	2696024	-0.29	-0.24
IIc	7e	3b	none	509986	698949	3340668	1280083	1442948	1124945	1391244	1026522	729036	718465	-0.44	-0.01
IIc	7e	none	none	17585222	18785909	65425370	20911441	22866656	23729475	25372127	25165502	18247669	18336503	-0.12	0.00
Sum	**7e**			**20816826**	**22850418**	**72159949**	**25969088**	**28632283**	**29060889**	**30909484**	**30299967**	**22519024**	**21750992**	-0.16	-0.03



Figures 8.2.1 – Western Channel -Trend in nominal effort (kW*days at sea) by derogations given in Table 1 of Annex IIC (Coun. Reg. 53/2010), 2003-2009. Derogations are sorted by gear and special condition (SPECON). Data qualities are summarised in section 5.5.2 and Table 5.5.2.1. 3a represents beam trawls of mesh size ≥ 80 mm and 3b represents static nets with mesh size < 220 mm.



Figures 8.2.2 – Western Channel -Trend in nominal effort (kW*days at sea) by derogations given in Table 1 of Annex IIC (Coun. Reg. 53/2010), 2003-2009. Derogations are sorted by gear and special condition (SPECON). Data qualities are summarised in section 5.5.2 and Table 5.5.2.1. 3a represents beam trawls of mesh size ≥ 80 mm and 3b represents static nets with mesh size < 220 mm.



Figures 8.2.3 – Western Channel -Trend in nominal effort (kW*days at sea) by unregulated gear according to Table 1 of Annex IIC (Coun. Reg. 53/2010), 2003-2009. Data qualities are summarised in section 5.5.2 and Table 5.5.2.1.

8.3. Trend in catch estimates 2003-2009 by derogation in management area 7e

Although the data available for the review of Annex IIC of regulation 53/2010 comes from all countries involved in the fisheries, there is little information on discards for most of the species. Only very sparse discard information is available for anglerfish, cod, haddock, hake, plaice, sole and whiting. The lack of discard information on plaice in particular, increases the likelihood of incorrect assumptions on total removals for that species.

The following Table 8.3.1 lists the landings, discards and discard rates for the main species by derogations. For brevity, the following sections represent the landings and discards by derogation in weight for a subset of the species caught ie. anglerfish (ANF), cod (COD), haddock (HAD), hake, (HKE), *Nephrops* (NEP), plaice (PLE), saithe (POK), sole (SOL), and whiting (WHG). However, additional data queries for other species can be made depending on data provisions of the national catches by the experts or national institutes. The data given in the table form the basis of Figure 8.3.1 displaying the catch compositions by derogations for the years 2003-2009. The absence of dark bars representing discards also indicates lack of observations rather than low discard numbers.

Figure 8.3.1 shows that in the beam trawl fleets (3a) landings of anglerfish and sole have substantially increased in the last 5 years. Plaice landings have declined over the whole period where the landings of the other main species have been rather stable at low levels. Landings by static nets (derogations 3b) are dominated by anglerfish which show a sharp decline in 2007, followed by relatively stable values. The category "none none" which is responsible for most of the landings (except for sole, plaice and partly anglerfish) consist mainly of otter trawls (see also section 8.6). Apart from a slight increase in haddock landings and a slight decrease in hake landings, the main other species have fluctuated around the same levels in the last 7 years. Information on landings and discards at age for derogation 3a, and the main none regulated gear (otter trawl) are shown in Figures 8.3.2-4 for sole, plaice and cod respectively. No catch at age was available for derogation 3b. Again, it should be noted that discard information is very sparse and the age compositions should be interpreted as landings composition.

Tab. 8.3.1 – Western Channel - Landings (t), discards (t) and relative discard rates by species and derogation, 2003-2009 – Note: Discard information for area 7e are sparse and not available for all countries.

ANNEX	REG_AREA	REG_GEAR	SPECIES	2003 L	2003 D	2003 R	2004 L	2004 D	2004 R	2005 L	2005 D	2005 R	2006 L	2006 D	2006 R	2007 L	2007 D	2007 R	2008 L	2008 D	2008 R	2009 L	2009 D	2009 R
IIc	7e	3a	ANF	501			769			795			1013			1086	105	0.09	959	74	0.07	916		
IIc	7e	3b	ANF	635			824			618			459			318			302			303		
IIc	7e	none	ANF	2505			2805			3472			2891			3256			2619			2688		
IIc	7e	3a	COD	33			29			32			36			49	2	0.04	37			28		
IIc	7e	3b	COD	26			16			15			16			13			8			13		
IIc	7e	none	COD	669			231	29	0.11	302			416			511	5	0.01	451			433		
IIc	7e	3a	HAD	18			14	2	0.13	10			17			22			30			38		
IIc	7e	3b	HAD	4			1			8			3			3			1			1		
IIc	7e	none	HAD	708			384	375	0.49	362			492			703			1023			1166		
IIc	7e	3a	HKE	5			6			6	18	0.75	6			3			10			12		
IIc	7e	3b	HKE	172			114			98			60			19			9			3		
IIc	7e	none	HKE	235			179	7	0.04	205	88	0.30	117	14	0.11	88			102			109		
IIc	7e	3a	NEP	0			0			0			0			0			0			0		
IIc	7e	3b	NEP							0			0			0			0			0		
IIc	7e	none	NEP	4			6			13			6			10			9			9		
IIc	7e	3a	PLE	820			801			767			743			571	2	0.00	547	9	0.02	581		
IIc	7e	3b	PLE	11			19			24			13			7			4			6		
IIc	7e	none	PLE	264			242			279			322			255			261			274		
IIc	7e	3a	POK	0			1			0			0			0			0			0		
IIc	7e	3b	POK	6			11			17			3			1			1			3		
IIc	7e	none	POK	6	20	0.77	5			2			3			1			1			1		
IIc	7e	3a	SOL	201			184			486			530			497	1	0.00	430			347		
IIc	7e	3b	SOL	29			49			71			41			49			45			48		
IIc	7e	none	SOL	247			192			300			268			273			232			222		
IIc	7e	3a	WHG	72			61			53	1	0.02	45			46	1	0.02	48			38		
IIc	7e	3b	WHG	9			7			6			11			8			6			5		
IIc	7e	none	WHG	1898	80	0.04	1352	116	0.08	1478	19	0.01	1293	425	0.25	1407	3	0.00	1501	164	0.10	1729		

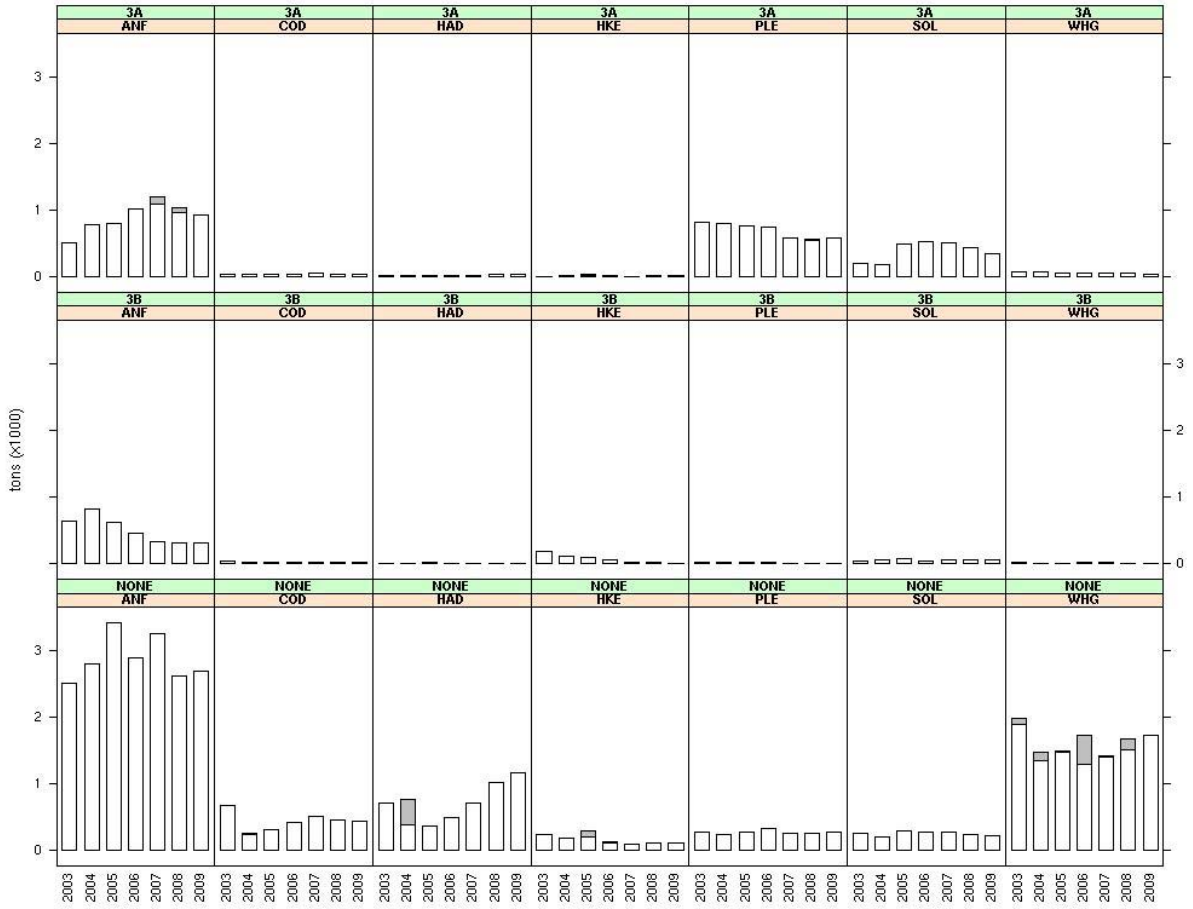


Fig. 8.3.1 – Western Channel - Landings (t) and discards (t) by derogation and species, 2003-2009, as well as for the none regulated gear. Note that information collected on discards is incomplete, so the apparent absence of discards in the figures for a given species/gear does not necessarily means zero discards.

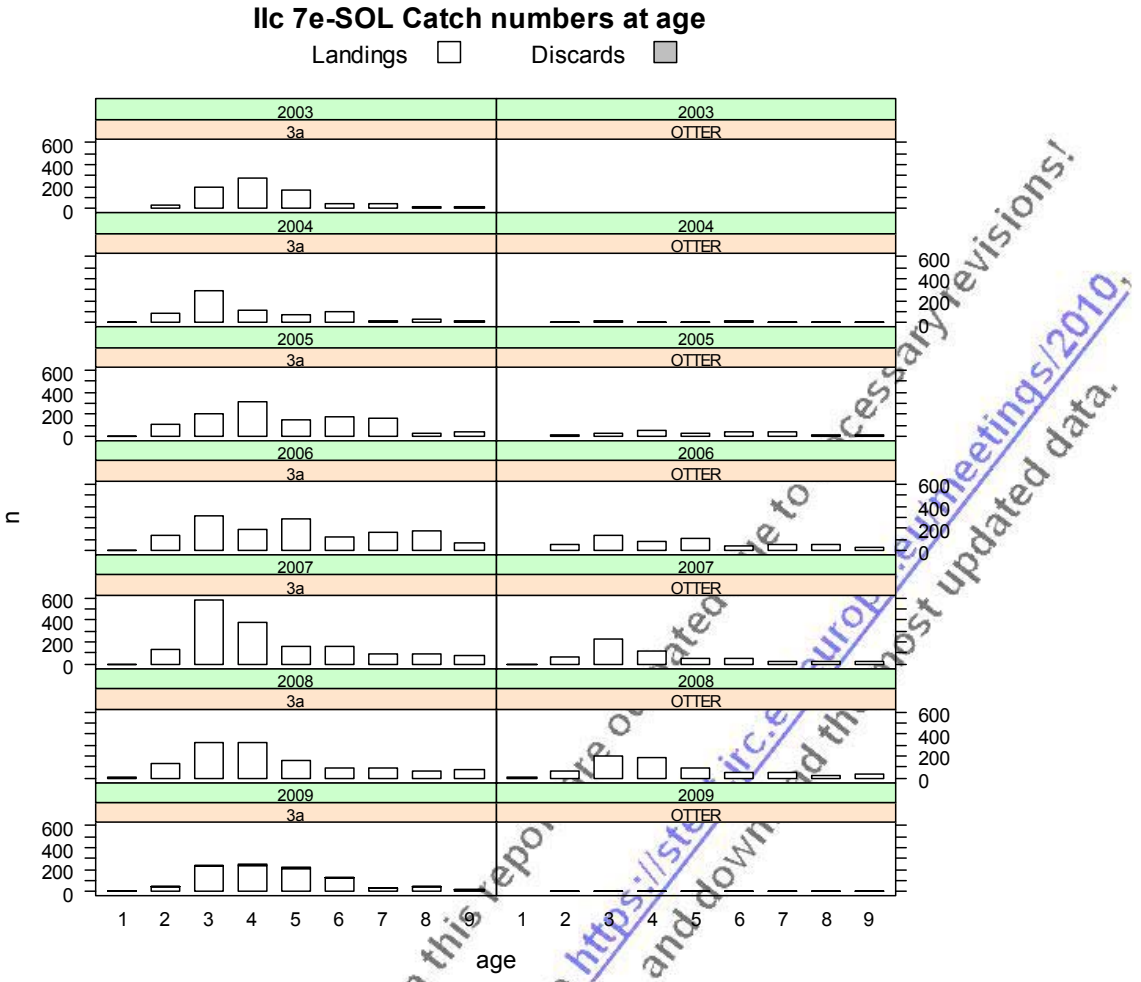


Fig. 8.3.2 – Western Channel - Landings (t) and discards (t) at age by derogation 3a and the main none regulated gear (otter trawl) for sole, 2003-2009. Note that information collected on discards is incomplete, so the apparent absence of discards in the figures for a given species/gear does not necessarily means zero discards.

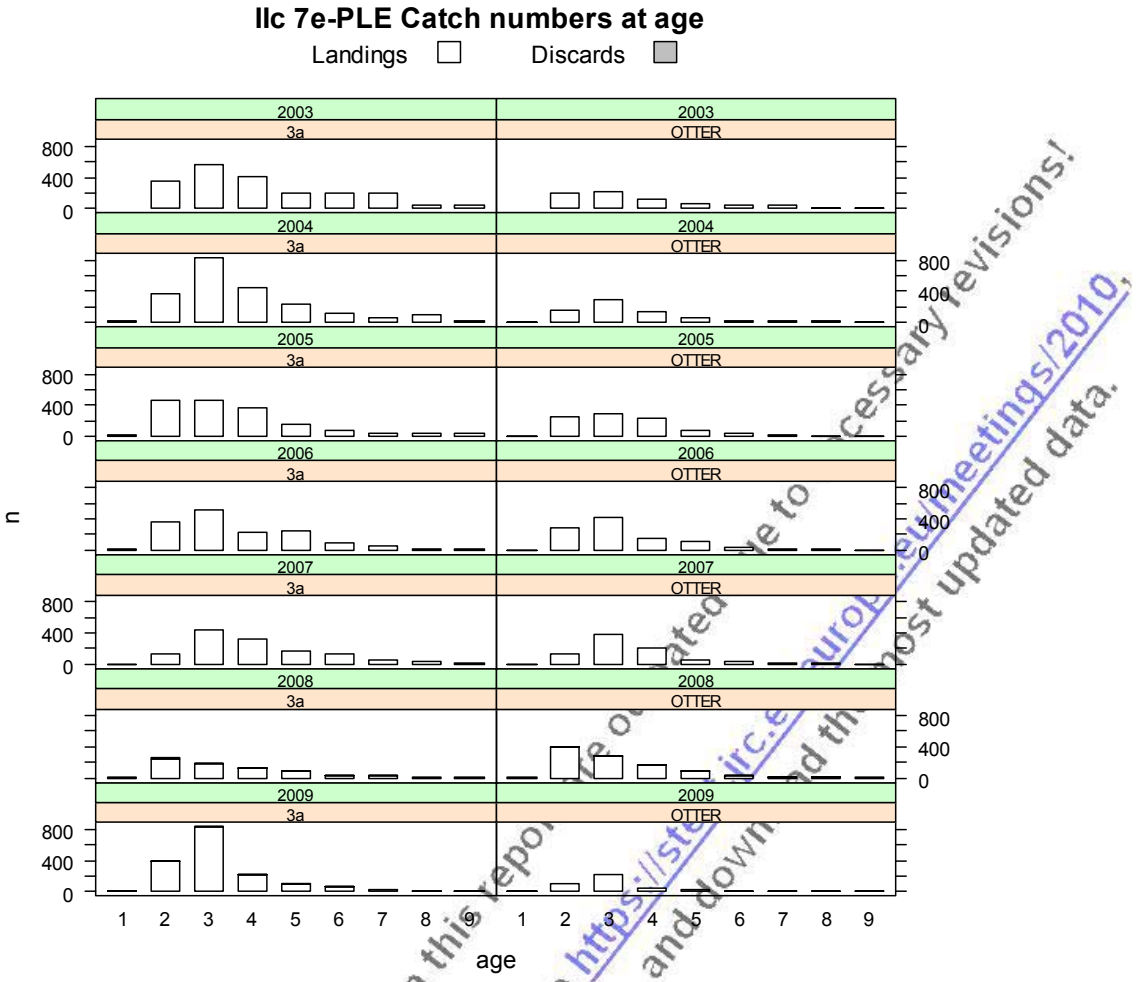


Fig. 8.3.3 – Western Channel - Landings (t) and discards (t) at age by derogation 3a and the main none regulated gear (otter trawl) for plaice, 2003-2009. Note that information collected on discards is incomplete, so the apparent absence of discards in the figures for a given species/gear does not necessarily means zero discards.

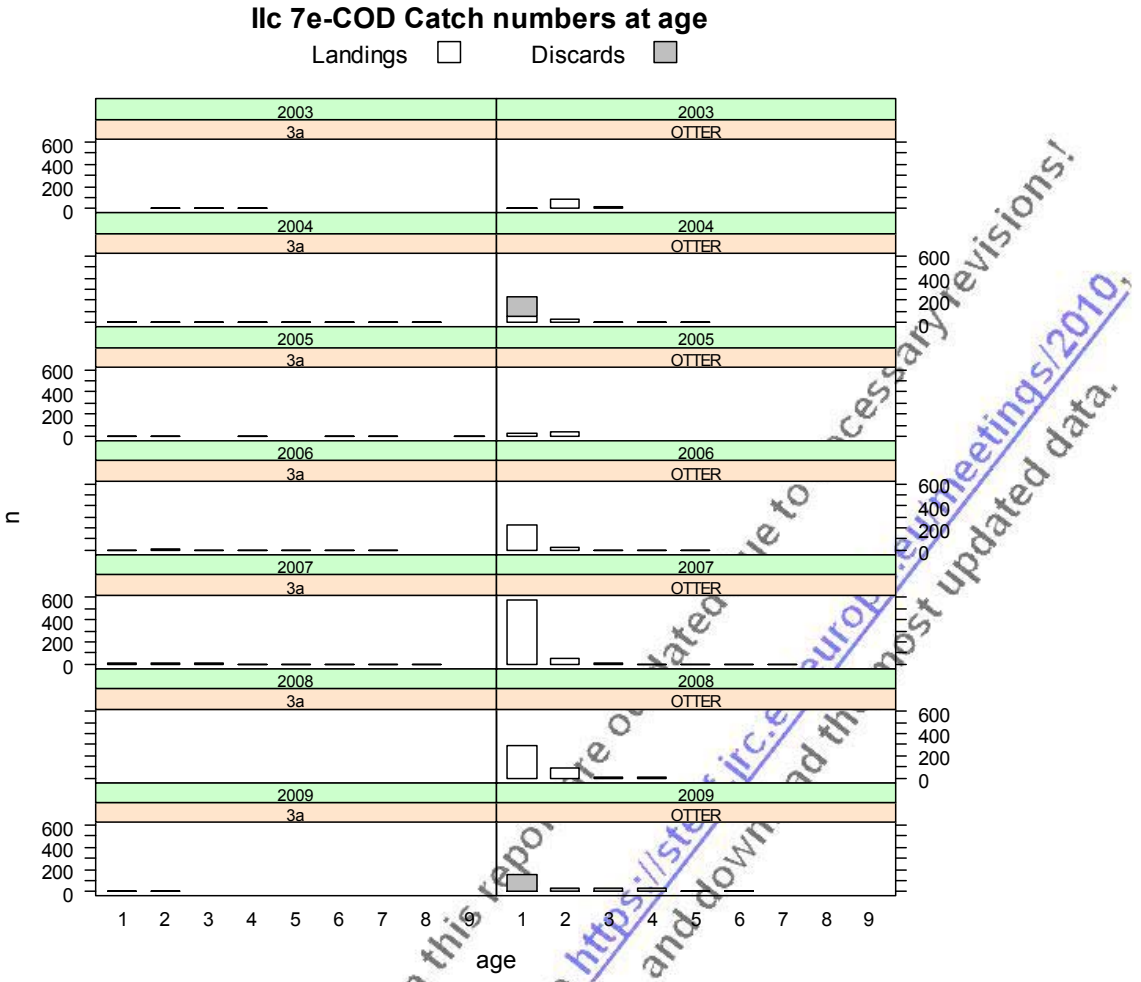


Fig. 8.3.4 – Western Channel - Landings (t) and discards (t) at age by derogation 3a and the main none regulated gear (otter trawl) for cod, 2003-2008. Note that information collected on discards is incomplete, so the apparent absence of discards in the figures for a given species/gear does not necessarily means zero discards.

8.4. Trend in CPUE of sole and plaice

Very limited discards are available for sole and plaice, therefore LPUE for sole and plaice are represented in Tables 8.4.1 and 8.4.2 and Figures 8.4.1 and 8.4.2 respectively. Graphically, only the regulated gears and the most important unregulated gears (otter trawl and dredges) are presented. For both species the regulated beam trawl fleet (3a) has the highest LPUE's. Sole LPUE's by beam trawlers have increased sharply from 2004 to 2005 and has stabilised around 125 g/(kW*days) since then. Sole LPUE's for static nets (3b) have fluctuated with a gradual increase over the years from 23 g/kW*days in 2003 to 65 g/kW*days in 2009. The LPUE of the main none regulated otter trawl fleet has been stable at around 20 g/kW*days over the whole time series. The plaice LPUE's for the regulated beam trawl fleet have decreased gradually from 217 g/kW*days in 2003 to 139 g/kW*days in 2007. In the next 3 years it reached again its formal level of the beginning of the time series (215 g/kW*days). The LPUE from the regulated static gear (3b) has declined gradually from 2005 (21 g/kW*days) to 8 g/kW*days in 2009. The LPUE of the main unregulated otter trawl gear has been rather stable around 25 g/kW*days. Both for sole and plaice, the LPUE of the unregulated beam trawl fleet (e.g. mesh size < 80mm or no mesh size provided) has highly fluctuated over the time series . As the "no providing" of mesh sizes vary highly from year to year for this unregulated gear group, STECF-SGMOS notes that trends for this gear should be interpreted with caution.

Table 8.4.1 – Western Channel - Sole CPUE (g/(kW*days)) by derogation and year, 2003-2009. Note: Discard information for area 7e area is sparse and therefore LPUE is provided in the table.

ANNEX	SPECIES	REG AREA	REG GEAR	SPECON	LPUE 2003	LPUE 2004	LPUE 2005	LPUE 2006	LPUE 2007	LPUE 2008	LPUE 2009	LPUE 2007-2009
IIc	SOL	7e	3a	none	53	42	116	128	121	121	128	123
IIc	SOL	7e	3b	none	23	33	63	29	48	62	65	57
IIc	SOL	7e	BEAM	none	0	82	197	100	0	0	48	37
IIc	SOL	7e	DEM_SEINE	none				0	0	0	0	0
IIc	SOL	7e	DREDGE	none	4	3	5	4	5	8	6	6
IIc	SOL	7e	GILL	none	17	4	7	0	0	0	2	0
IIc	SOL	7e	LONGLINE	none	0	0	0	0	0	0	0	0
IIc	SOL	7e	none	none	63	59	52	94	0	0	0	0
IIc	SOL	7e	OTTER	none	20	15	20	20	20	23	22	21
IIc	SOL	7e	PEL_TRAWI	none	0	0	0	0	0	0	0	0
IIc	SOL	7e	POTS	none	0	0	1	0	0	0	0	0
IIc	SOL	7e	TRAMMEL	none	8	38	35	0	2	4	4	3

Table 8.4.2 – Western Channel - Plaice CPUE (g/(kW*days)) by derogation and year, 2003-2009. Note: Discard information for area 7e area is sparse and therefore LPUE is provided in the table.

ANNEX	SPECIES	REG AREA	REG GEAR	SPECON	LPUE 2003	LPUE 2004	LPUE 2005	LPUE 2006	LPUE 2007	LPUE 2008	LPUE 2009	LPUE 2007-2009
IIc	PLE	7e	3a	none	217	185	182	179	139	154	215	164
IIc	PLE	7e	3b	none	9	12	21	9	7	5	8	7
IIc	PLE	7e	BEAM	none	312	82	61	100	332	0	0	75
IIc	PLE	7e	DEM_SEINE	none			0	0	0	0	10	5
IIc	PLE	7e	DREDGE	none	2	2	2	2	1	2	2	2
IIc	PLE	7e	GILL	none	0	0	1	0	0	0	2	0
IIc	PLE	7e	LONGLINE	none	0	0	0	0	0	0	0	0
IIc	PLE	7e	none	none	0	30	0		0	0	0	0
IIc	PLE	7e	OTTER	none	23	21	21	26	21	30	30	26
IIc	PLE	7e	PEL_SEINE	none	0				0	0	0	0
IIc	PLE	7e	PEL_TRAWI	none	0	0	0	0	0	0	0	0
IIc	PLE	7e	POTS	none	0	0	0	0	0	0	0	0
IIc	PLE	7e	TRAMMEL	none	8	0	9	0	0	2	2	1

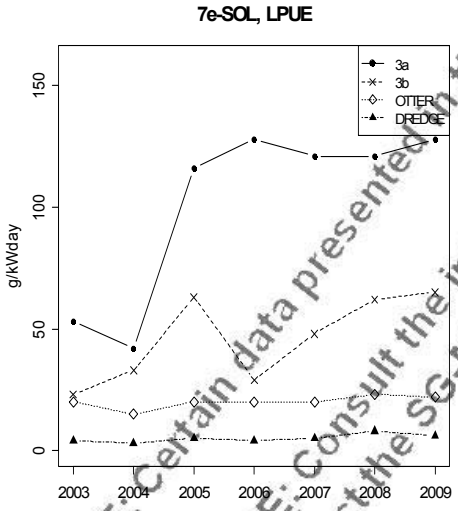


Figure 8.4.1- Western Chanel - Sole – LPUE (g/(KW*days)) by derogation and year, 2003-2009. Note: Discard information for area 7e are sparse and therefore the CPUE has not been plotted.

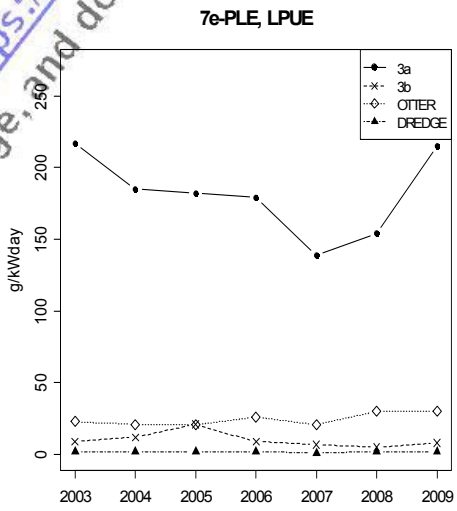


Figure 8.4.2- Western Chanel - Plaice – LPUE (g/(KW*days)) by derogation and year, 2003-2009. Note: Discard information for area 7e are sparse and therefore the CPUE has not been plotted.

8.5. Ranked derogations according to relative contributions to sole catches

The relative contribution of sole weights in the catch (Table 8.5.1) shows an increase from 2003 to 2006 and a further marked rise in 2009 for the dominating beam trawls (3a), which coincides with a decrease of the category "none none", mainly otter trawls which are not effort regulated in Annex IIc. STECF-SGMOS notes however that this otter trawl fleet is generally responsible for about 30% of the estimated sole and plaice catches in weight and about 90% of the cod catches in weight (see also section 8.6). The static nets with mesh size <220 mm (3b) are taking around 3-12% of sole catches in weight. There is no difference in ranking the derogations according to the year 2009 or the average of 2007-2009.

Table 8:5.1 - Western Channel - Ranked derogations according to relative sole catches in weight (t) 2003-2009. Ranking is according to the year 2009 and the average 2007-2009.

ANNEX	REG_AREA	SPECIES	REG_GEAR	2003 Rel	2004 Rel	2005 Rel	2006 Rel	2007 Rel	2008 Rel	2009 Rel	Avg.2007-2009
IIc	7e	SOL	3a	0.42	0.44	0.57	0.63	0.61	0.61	0.88	0.70
IIc	7e	SOL	none	0.51	0.44	0.34	0.31	0.33	0.32	0.09	0.25
IIc	7e	SOL	3b	0.06	0.11	0.08	0.05	0.06	0.06	0.03	0.05

8.6. Unregulated gear in management area 7e

Category 'none none' represents unregulated gear types and mesh sizes in addition to unidentified mesh sizes. This section provides a break down of the main gears within this category in terms of effort (kW*Days at sea) and cod, sole and plaice catches.

The effort of the unregulated gear group 'None none' has been around 85% of the overall nominal effort for the whole time series.

Table 8.6.1 shows the disaggregation of the 'none none' category into the different gears categories. Effort by otter trawl is by far the dominant gear category with percentages in excess of 45% for all years. Dredges contribute around 25%. Pelagic trawl and pots contribute each about 10% to the overall effort of the non regulated gear. The rest of the gears also account for about 10%.

Table 8.6.2 provides the cod catches of the unregulated gear types. The cod catches of the unregulated gear are in excess of 87% of the overall cod catches in area 7e for each year of the data series (2003-2009). The otter trawl fleet is taking the bulk of these catches with percentages in excess of 84%. For 2009 the unregulated gears account for 91% of the overall cod catches where the otter trawl fleet is responsible for 88% of these catches.

Table 8.6.3 provides the sole catches of the unregulated gear types. The sole catches of the unregulated gear are in excess of 32% of the overall sole catches in area 7e for each year of the data series (2003-2009). The otter trawl fleet is the main fleet involved with percentages in excess of 27%. For 2009 the unregulated gears account for 36% of the overall sole catches where the otter trawl fleet is responsible for 30% of these catches.

Table 8.6.4 provides the plaice catches of the unregulated gear types. The plaice catches of the unregulated gear are in excess of 23% of the overall plaice catches in area 7e for each year of the data series (2003-2009). The otter trawl fleet is the main fleet involved with percentages in excess of 22%. For 2009 the unregulated gears account for 32% of the overall plaice catches where the otter trawl fleet is responsible for 30% of these catches.

Again STECF-SGMOS would like to mention that there is little information on discards for area 7e and therefore that the above percentages are more likely to be representative of landings than of total catches.

Table. 8.6.1. Western Channel Unregulated gear (category none-none) effort (kW*Days) by gear type, 2000-2009.

ANNEX	REG_AREA	REG_GEAR	REG GEAR C	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
IIc	7e	none	OTTER	7878483	9312279	41442579	11226467	11304188	11984621	12025503	11843462	8466060	8576314
IIc	7e	none	DREDGE	3442416	3133189	11938605	4384762	5637002	5602368	5903594	6083728	4750312	5121171
IIc	7e	none	PEL_TRAWL	3832647	3821405	4083732	2391073	1830023	1474970	2163387	2131950	2020267	1381418
IIc	7e	none	POTS	1633466	1769389	5702451	1946253	2801196	2784755	3141625	2718668	1230013	1316333
IIc	7e	none	GILL	385415	344195	1178101	301151	488105	674577	534836	781892	658576	665549
IIc	7e	none	TRAMMEL	97478	97268	153552	130102	131206	346504	436467	626072	486195	475625
IIc	7e	none	DEM_SEINE	1323	36507	32546	24093	52316	94168	202941	166784	129716	307752
IIc	7e	none	LONGLINE	167903	164059	479076	263039	382787	441367	615657	587251	312345	277793
IIc	7e	none	PEL_SEINE	49543	74759	342245	209532	193853	183887	295531	207190	175282	174967
IIc	7e	none	BEAM	70312	20286	8292	3205	12234	65823	9980	6031		20698
IIc	7e	none	none	26236	12573	64191	31764	33746	76435	42606	12474	18883	18883
Sum				**17585222**	**18785909**	**65425370**	**20911441**	**22866656**	**23729475**	**25372127**	**25165502**	**18247669**	**18336503**

Table. 8.6.2. Western Channel. Unregulated gear (category none-none) cod (t) catch composition by gear type, 2003-2009. Note: Discard information for area 7e are sparse and therefore the table figures should rather be interpreted as landings then catches.

ANNEX	REG_AREA	SPECIES	REG_GEAR	Gear code	2003	2004	2005	2006	2007	2008	2009
IIc	7e	COD	none	OTTER	662	252	298	391	503	439	415
IIc	7e	COD	none	GILL	3	4	3	5	3	6	7
IIc	7e	COD	none	DEM_SEINE				1	6		5
IIc	7e	COD	none	TRAMMEL	2	1	1	2	2	3	3
IIc	7e	COD	none	DREDGE					1	2	2
IIc	7e	COD	none	LONGLINE	3	3		17	1	1	1
IIc	7e	COD	none	BEAM							
IIc	7e	COD	none	none							
IIc	7e	COD	none	PEL_TRAWL	1						
IIc	7e	COD	none	POTS							
Sum					**671**	**260**	**302**	**416**	**516**	**451**	**433**

Table. 8.6.3. Western Chanel. Unregulated gear (category none-none) sole (t) catch composition by gear type, 2003-2009. Note: Discard information for area 7e are sparse and therefore the table figures should rather be interpreted as landings then catches.

ANNEX	REG_AREA	SPECIES	REG_GEAR	Gear code	2003	2004	2005	2006	2007	2008	2009
IIc	7e	SOL	none	OTTER	221	165	235	236	239	192	187
IIc	7e	SOL	none	DREDGE	18	17	28	27	32	38	31
IIc	7e	SOL	none	TRAMMEL	1	5	12		1	2	2
IIc	7e	SOL	none	BEAM	1	1	13	1			1
IIc	7e	SOL	none	GILL	4	2	5				1
IIc	7e	SOL	none	LONGLINE							
IIc	7e	SOL	none	none	2	2	4	4			
IIc	7e	SOL	none	PEL_TRAWL							
IIc	7e	SOL	none	POTS			3		1		
IIc	7e	SOL	none	DEM_SEINE							
Sum					**247**	**192**	**300**	**268**	**273**	**232**	**222**

Table. 8.6.4. Western Chanel. Unregulated gear (category none-none) plaice (t) catch composition by gear type, 2003-2009. Note: Discard information for area 7e are sparse and therefore the table figures should rather be interpreted as landings then catches.

ANNEX	REG_AREA	SPECIES	REG_GEAR	Gear code	2003	2004	2005	2006	2007	2008	2009
IIc	7e	PLE	none	OTTER	255	231	257	312	246	252	261
IIc	7e	PLE	none	DREDGE	7	9	14	9	7	8	8
IIc	7e	PLE	none	DEM_SEINE							3
IIc	7e	PLE	none	GILL			1				1
IIc	7e	PLE	none	TRAMMEL	1		3			1	1
IIc	7e	PLE	none	BEAM	1	1	4	1	2		
IIc	7e	PLE	none	LONGLINE							
IIc	7e	PLE	none	none		1					
IIc	7e	PLE	none	PEL_TRAWL							
IIc	7e	PLE	none	POTS							
IIc	7e	PLE	none	PEL_SEINE							
Sum					**264**	**242**	**279**	**322**	**255**	**261**	**274**

8.7. Fishing effort and catches (landings and discards) of sole and associated species of vessels <10m

8.7.1. General considerations regarding catches of vessels <10m

Table 8.7.1 shows a preliminary overview of the catches of some main species (anglerfish, cod, haddock, hake, *Nephrops*, plaice, saithe, sole and whiting in area 7e for vessels <10m (2003-2009). It should be noted that not all countries have submitted information and that the total figures are therefore likely to give an underestimation of the catches of this vessel category. STECF-SGMOS would like to mention that although these figures are underestimates, they indicate that from between 7% and 15% of the sole catches are taken by vessels < 10m. For other species with substantial catches, the percentages vary between 4% and 7% for anglerfish, between 5% and 10% for cod and between 6% and 13% for plaice. For the other species listed, the percentages vary between 1% and 4%, in some cases the catches are very small.

Table 8.7.1 – Western Channel – Overview of anglerfish, cod, haddock, hake, nephrops, plaice, saithe, sole and whiting catches by vessels <10m, 2000-2009.

REG_AREA	REG_GEAR	SPECIES	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
7e	3a	ANF				501	769	795	1013	1086	959	916
7e	3b	ANF				635	824	618	459	318	302	303
7e	none	ANF				2505	2805	3412	2891	3256	2619	2688
Sum_O10m		**ANF**				**3641**	**4398**	**4825**	**4363**	**4660**	**3880**	**3907**
Sum_U10m		**ANF**	**17**	**26**	**71**	**249**	**262**	**217**	**201**	**287**	**238**	**225**
%						**7**	**6**	**4**	**5**	**6**	**6**	**6**
7e	3a	COD				33	29	32	36	49	37	28
7e	3b	COD				26	16	15	16	13	8	13
7e	none	COD				669	231	302	416	511	451	433
Sum_O10m		**COD**				**728**	**276**	**349**	**468**	**573**	**496**	**474**
Sum_U10m		**COD**	**1**	**3**	**3**	**40**	**27**	**17**	**40**	**56**	**36**	**46**
%						**6**	**10**	**5**	**9**	**10**	**7**	**10**
7e	3a	HAD				18	14	10	17	22	30	38
7e	3b	HAD				4	4	8	3	3	1	1
7e	none	HAD				708	384	362	492	703	1023	1166
Sum_O10m		**HAD**				**730**	**402**	**380**	**512**	**728**	**1054**	**1205**
Sum_U10m		**HAD**	**0**	**0**	**0**	**22**	**4**	**7**	**8**	**27**	**37**	**28**
%						**3**	**1**	**2**	**1**	**4**	**4**	**2**
7e	3a	HKE				5	6	6	6	3	10	12
7e	3b	HKE				172	114	98	60	19	9	3
7e	none	HKE				235	179	205	117	88	102	109
Sum_O10m		**HKE**				**412**	**299**	**309**	**183**	**110**	**121**	**124**
Sum_U10m		**HKE**	**0**	**0**	**1**	**2**	**2**	**2**	**1**	**1**	**3**	**5**
%						**1**	**1**	**1**	**1**	**1**	**3**	**4**
7e	3a	NEP				0	0	0	0	0	0	0
7e	3b	NEP						0	0	0	0	0
7e	none	NEP				4	8	13	6	10	9	9
Sum_O10m		**NEP**				**4**	**8**	**13**	**6**	**10**	**9**	**9**
Sum_U10m		**NEP**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**4**
%						**0**	**0**	**0**	**1**	**0**	**0**	**47**
7e	3a	PLE				820	801	767	743	571	547	581
7e	3b	PLE				11	19	24	13	7	4	6
7e	none	PLE				264	242	279	322	255	261	274
Sum_O10m		**PLE**				**1095**	**1062**	**1070**	**1078**	**833**	**812**	**861**
Sum_U10m		**PLE**	**11**	**10**	**16**	**96**	**82**	**66**	**131**	**105**	**75**	**68**
%						**9**	**8**	**6**	**12**	**13**	**9**	**8**
7e	3a	POK				0	1	0	0	0	0	0
7e	3b	POK				6	11	17	3	1	1	3
7e	none	POK				6	5	2	3	1	1	1
Sum_O10m		**POK**				**12**	**17**	**19**	**6**	**2**	**2**	**4**
Sum_U10m		**POK**	**0**	**0**	**0**	**2**	**1**	**1**	**1**	**1**	**1**	**1**
%						**13**	**6**	**4**	**14**	**42**	**33**	**34**
7e	3a	SOL				201	184	486	530	497	430	347
7e	3b	SOL				29	49	71	41	49	45	48
7e	none	SOL				247	192	300	268	273	232	222
Sum_O10m		**SOL**				**477**	**425**	**857**	**839**	**819**	**707**	**617**
Sum_U10m		**SOL**	**19**	**13**	**38**	**70**	**59**	**74**	**86**	**86**	**51**	**44**
%						**15**	**14**	**9**	**10**	**10**	**7**	**7**
7e	3a	WHG				72	61	53	45	46	48	38
7e	3b	WHG				9	7	6	11	8	6	5
7e	none	WHG				1898	1352	1478	1293	1407	1501	1729
Sum_O10m		**WHG**				**1979**	**1420**	**1537**	**1349**	**1461**	**1555**	**1772**
Sum_U10m		**WHG**	**3**	**3**	**7**	**110**	**79**	**54**	**73**	**123**	**128**	**141**
%						**6**	**6**	**4**	**5**	**8**	**8**	**8**

8.7.2. Country specific information of vessels <10m

More detailed information for vessels <10 meters were available only from France for the period 2003-2007. This information was presented in the 2008 report and is not repeated here. An update will be provided once new data become available.

8.8. Spatial distribution patterns of effective fishing effort of trawled gears 2003-2009

Figure 8.8.1 shows the spatial distribution of the effective fishing effort for beam trawl fleets with mesh size ≥80mm (3a) during the period 2003 to 2009. The pattern seems similar for the whole period with higher effort deployed along the English coast and somewhat higher values along the French coast around Guernsey and Jersey.

Figure 8.8.2 shows the spatial distribution of the effective fishing effort for static nets with mesh size <220mm (3b) during the period 2003 to 2009. The fishing effort is more deployed along the French coasts with occasional higher densities of activities along the most southern point of the English coast.

Figure 8.8.3 shows the spatial distribution of the effective fishing effort for the unregulated beam trawl fleet with no mesh size provided or mesh size < 80mm during the period 2003 to 2009. Since 2008, the effort which was predominantly deployed on the English coast, has substantially decreased in all rectangles.

Figure 8.8.4 shows the spatial distribution of the effective fishing effort for the unregulated demersal seine during the period 2003 to 2009. Most effort deployed in the same rectangles off the English coast after 2005. The years 2003 and 2004 only indicate activities in 1 rectangle.

Figure 8.8.5 shows the spatial distribution of the effective fishing effort for the unregulated dredges during the period 2003 to 2009. Most effort deployed off the English coast and off the coast of Saint Malo. Since 2007, a more widerly distribution of effort has been observed.

Figure 8.8.6 shows the spatial distribution of the effective fishing effort for the unregulated gill nets during the period 2003 to 2009. A similar pattern of effort deployment for all years over almost the whole VIIe area.

Figure 8.8.7 shows the spatial distribution of the effective fishing effort for the unregulated longlines during the period 2003 to 2009. Again, a similar pattern of effort deployment for all years over almost the whole VIIe area.

Figure 8.8.8 shows the spatial distribution of the effective fishing effort for the unregulated otter trawls during the period 2003 to 2009. From 2003 until 2007 a similar pattern of effort deployment over almost the whole VIIe area with higher concentrations along the English coast and off the coast of Saint Malo. Since 2008, the effort deployment in the central Eastern English Channel has substantially decreased.

Figure 8.8.9 shows the spatial distribution of the effective fishing effort for the unregulated pelagic seine during the period 2003 to 2009. Very sparce patches of effort deployment, predominantly along the French coast.

Figure 8.8.10 shows the spatial distribution of the effective fishing effort for the unregulated pelagic trawls during the period 2003 to 2009. A similar pattern of effort deployment for all years over almost the whole VIIe area.

Figure 8.8.11 shows the spatial distribution of the effective fishing effort for the unregulated pots during the period 2003 to 2009. A similar pattern of effort deployment for all years, predominantly along the English coast and the coast off Saint Malo.

Figure 8.8.12 shows the spatial distribution of the effective fishing effort for the unregulated trammel nets during the period 2003 to 2009. A similar pattern of effort deployment for all years, predominantly off the French coast.

Figure 8.8.13 shows the spatial distribution of the effective fishing effort for the unregulated gear ("none-none"), gears without mesh size given during the period 2003 to 2009.A similar pattern of effort deployment for all years, predominantly off the French coast.

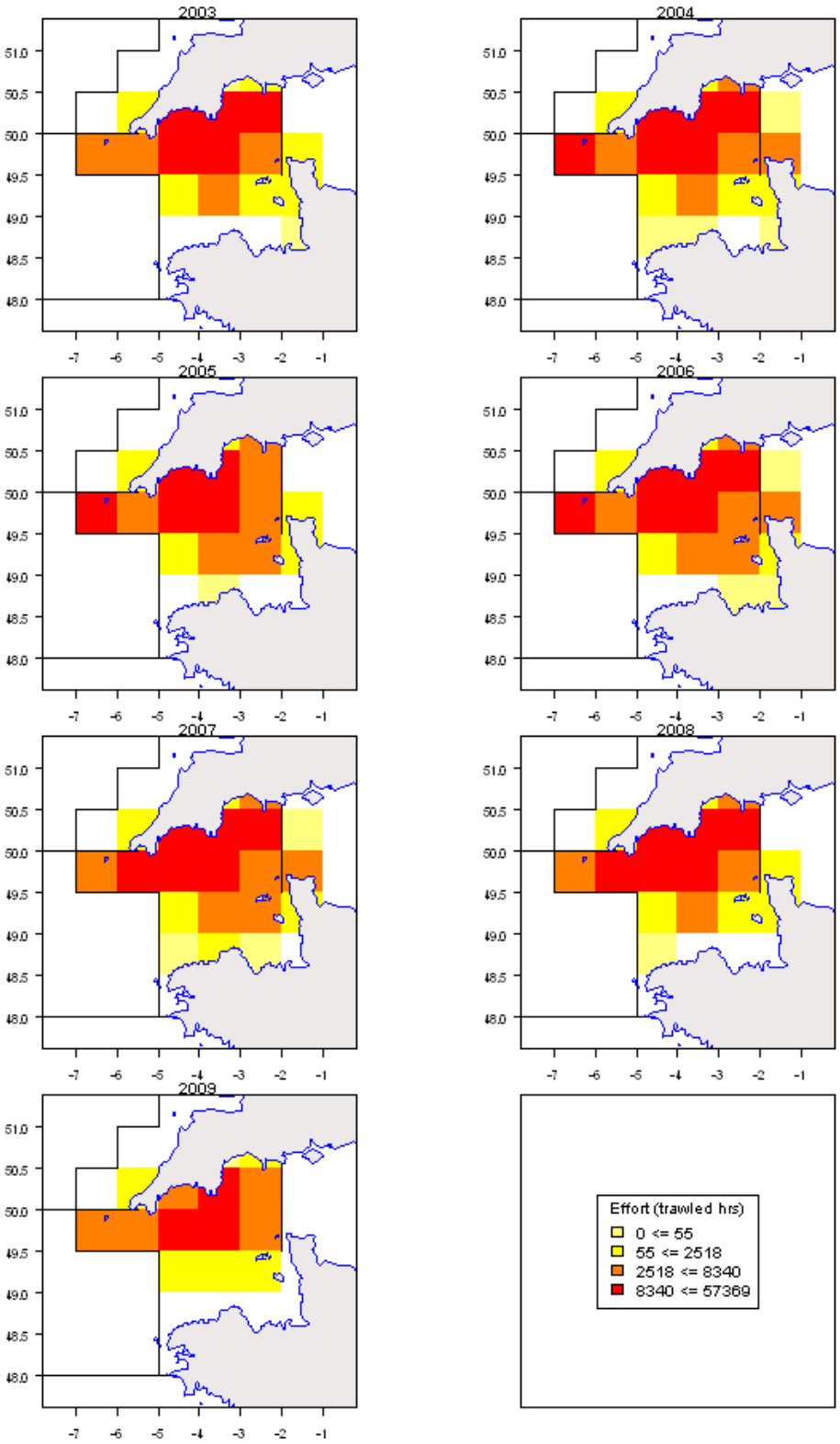


Figure 8.8.1. Western Channel. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Beam trawl fleet with mesh size ≥80 mm(3a), 2003-2009.

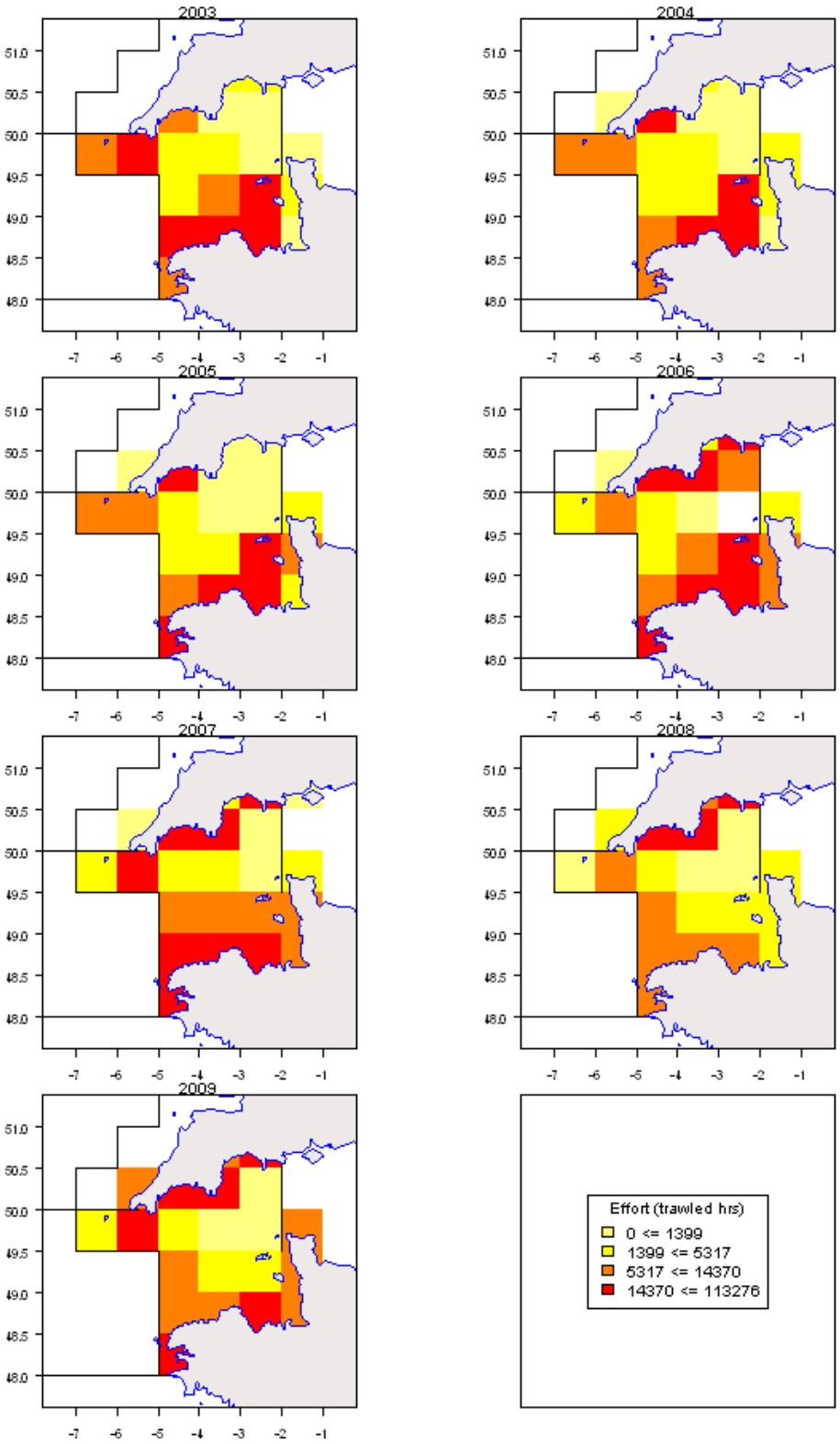


Figure 8.8.2. Western Channel. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for static nets with mesh size <220mm (3b), 2003-2009.

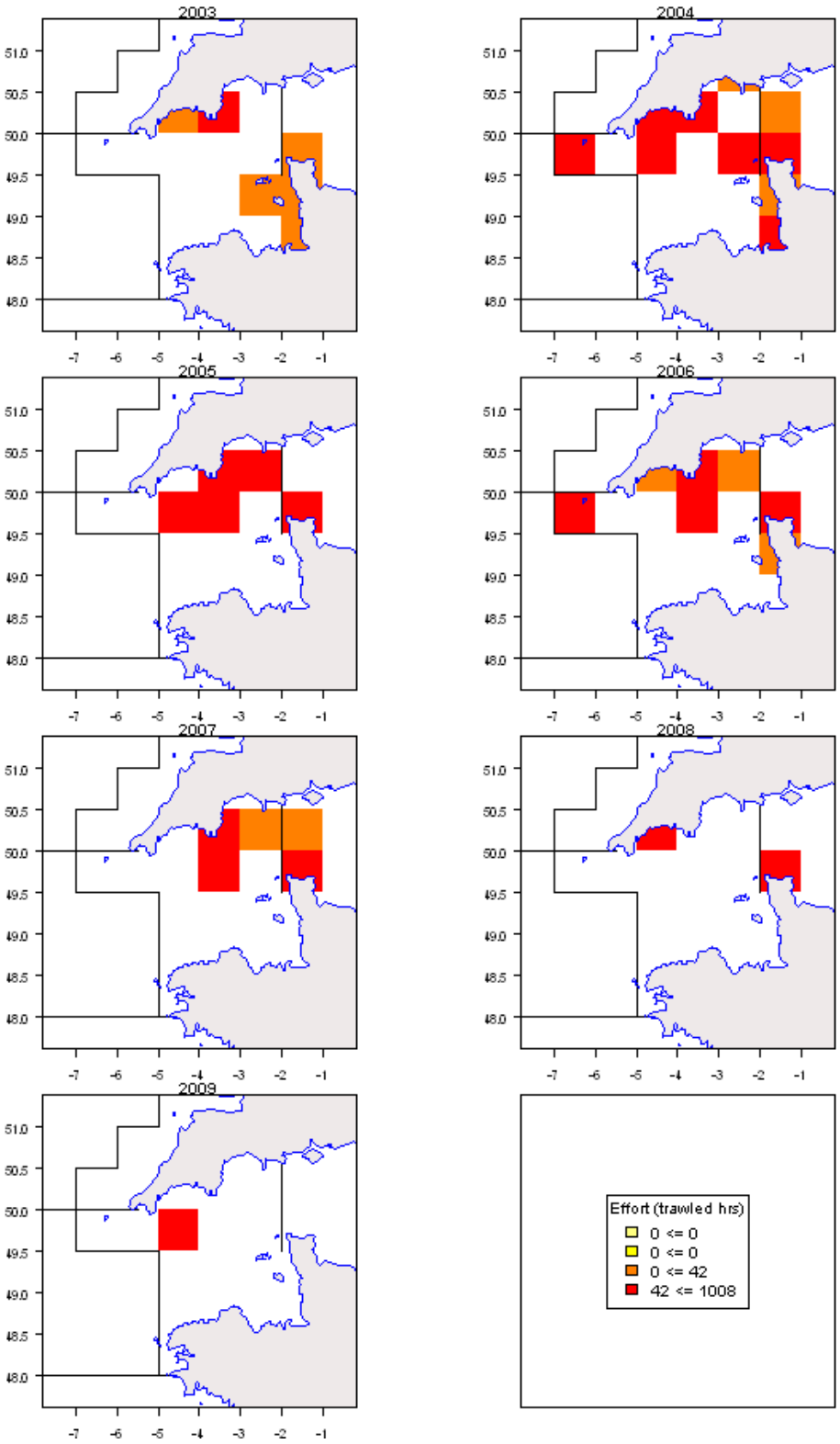


Figure 8.8.3. Western Channel. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Beam trawl fleet with no mesh size provided or mesh size <80 mm, 2003-2009.

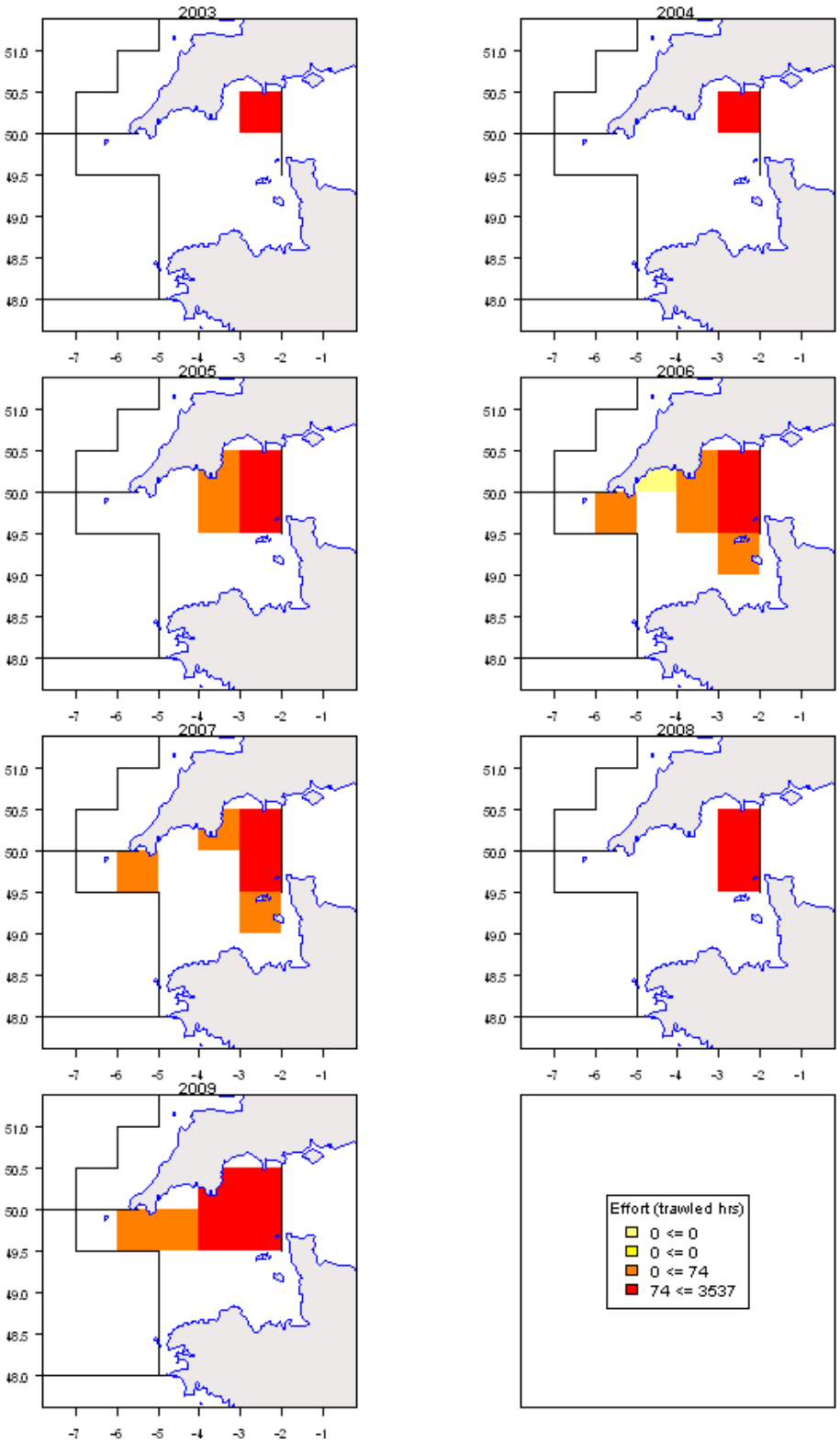


Figure 8.8.4. Western Channel. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Demersal Seine, 2003-2009.

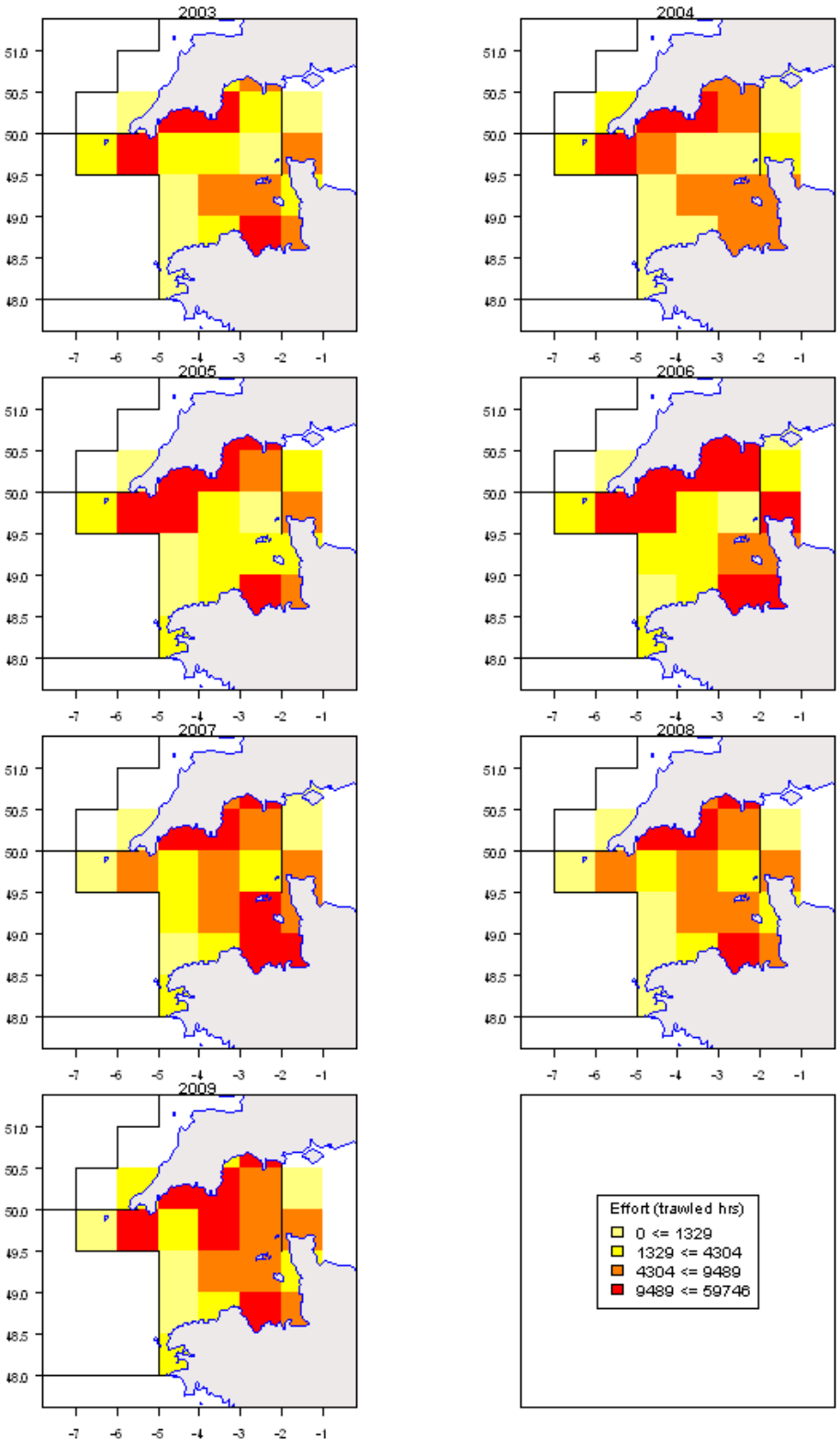


Figure 8.8.5. Western Channel. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Dredges, 2003-2009.

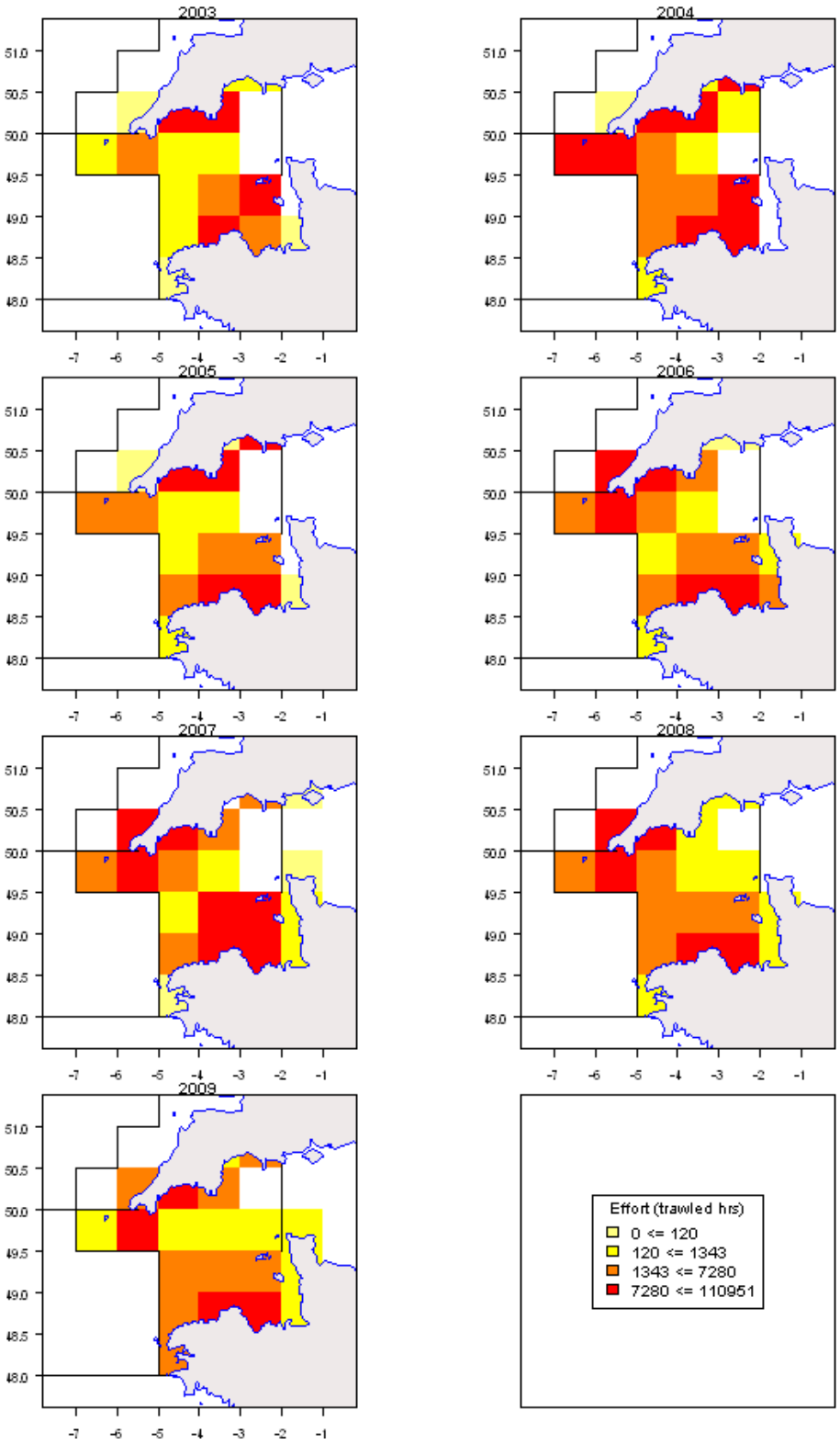


Figure 8.8.6. Western Channel. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Gill nets, 2003-2009.

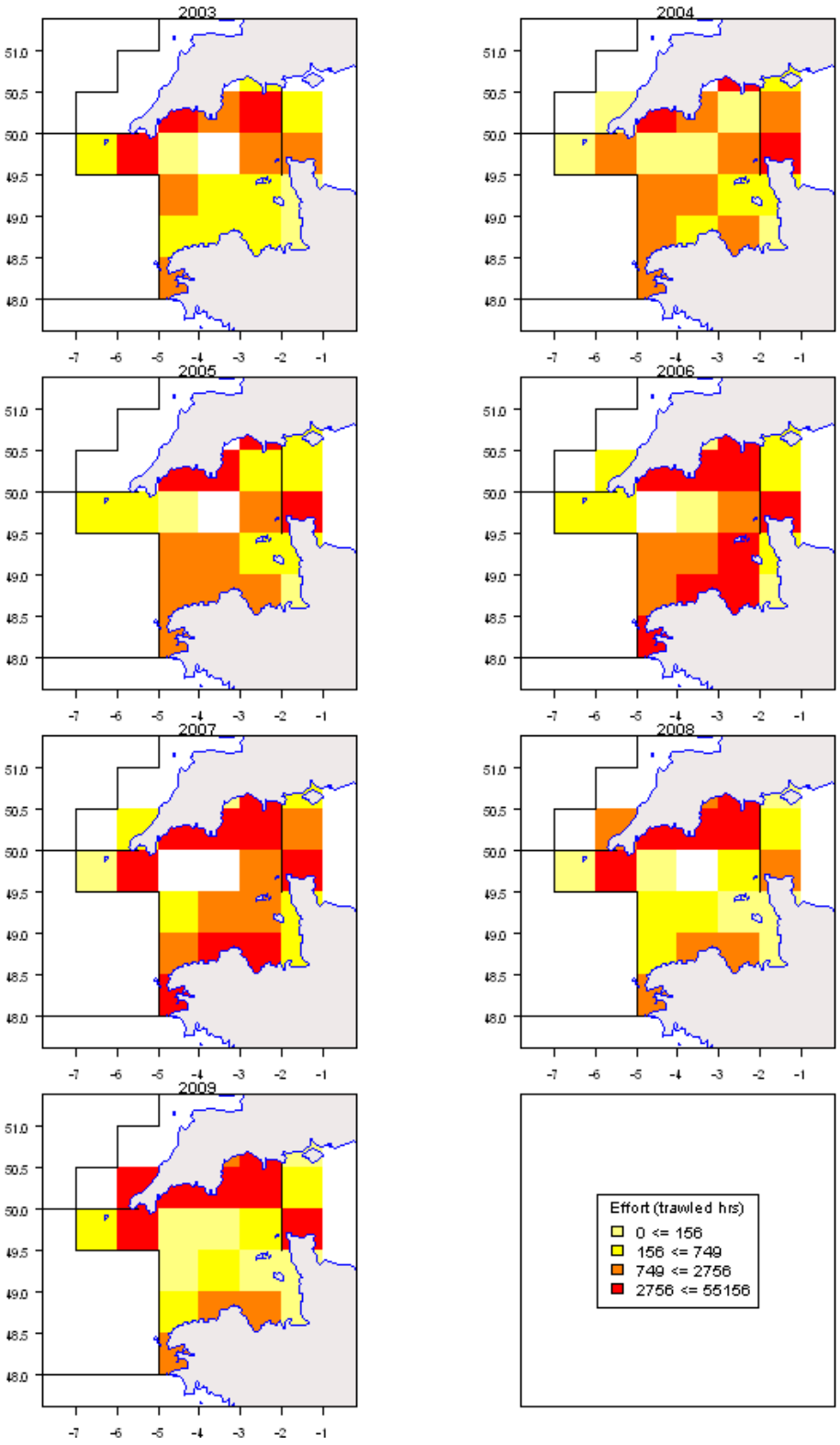


Figure 8.8.7. Western Channel. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Longlines, 2003-2009.

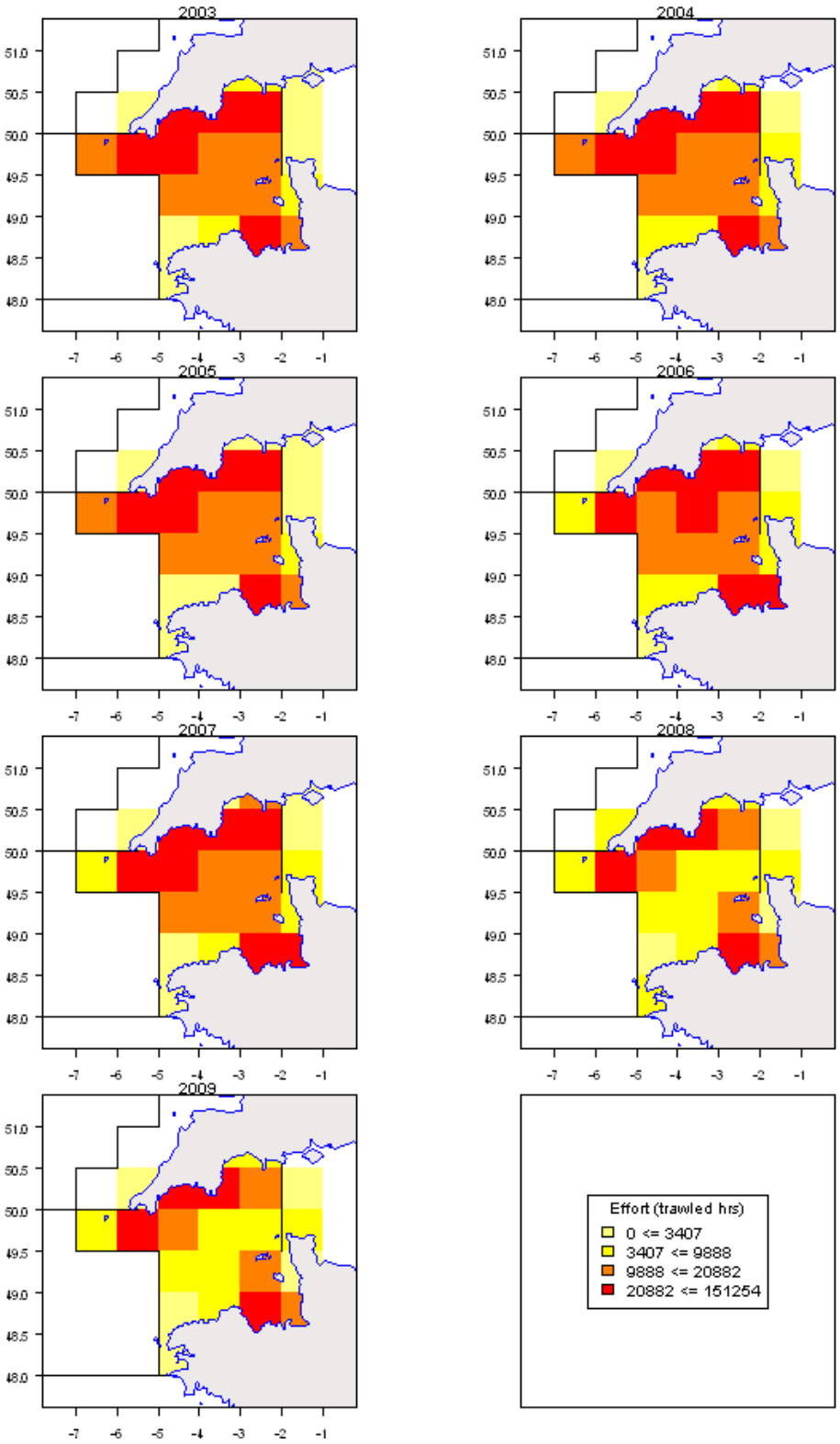


Figure 8.8.8. Western Channel. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Otter Trawl, 2003-2009.

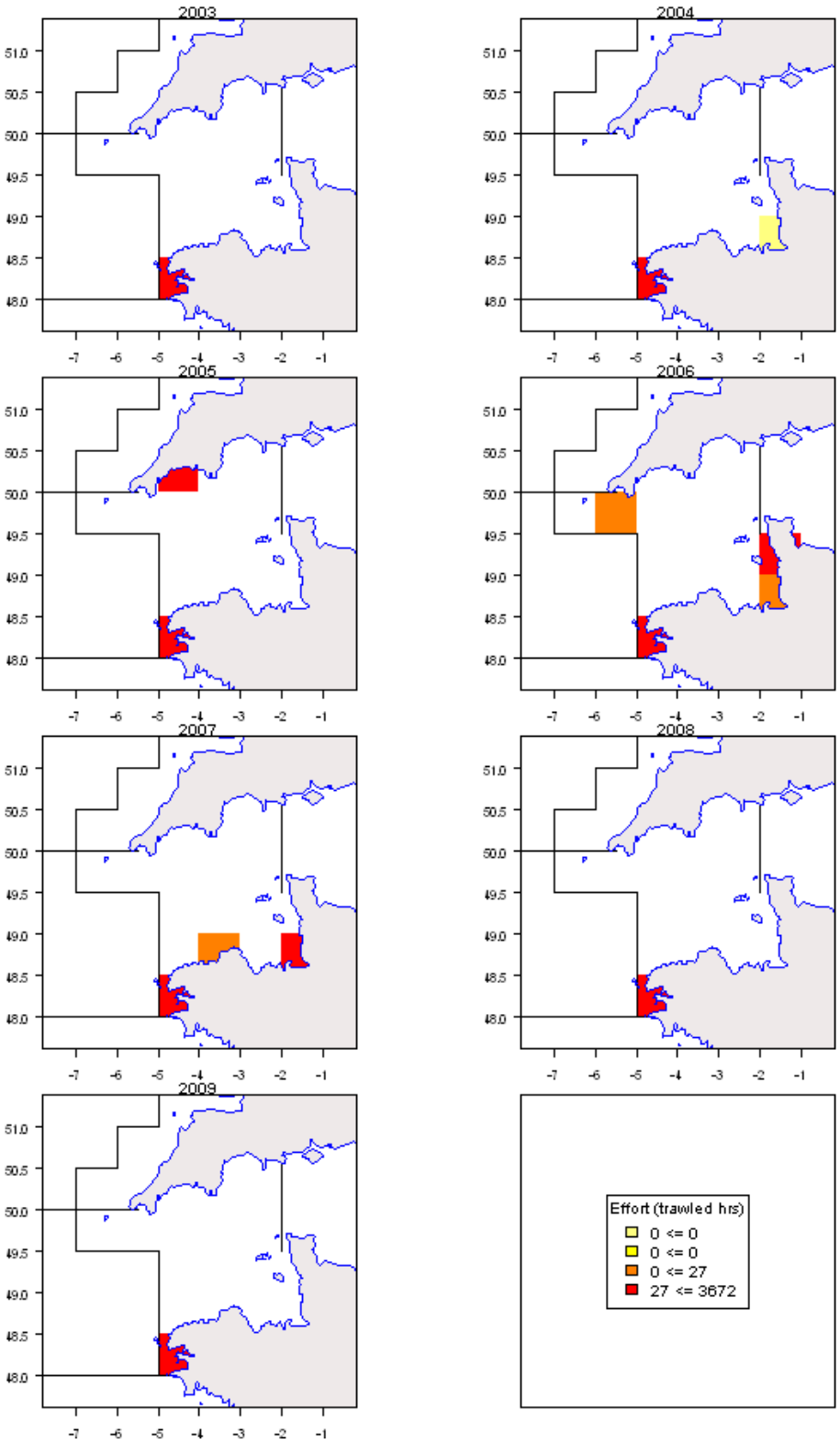


Figure 8.8.9. Western Channel. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Pelagic Seine, 2003-2009.

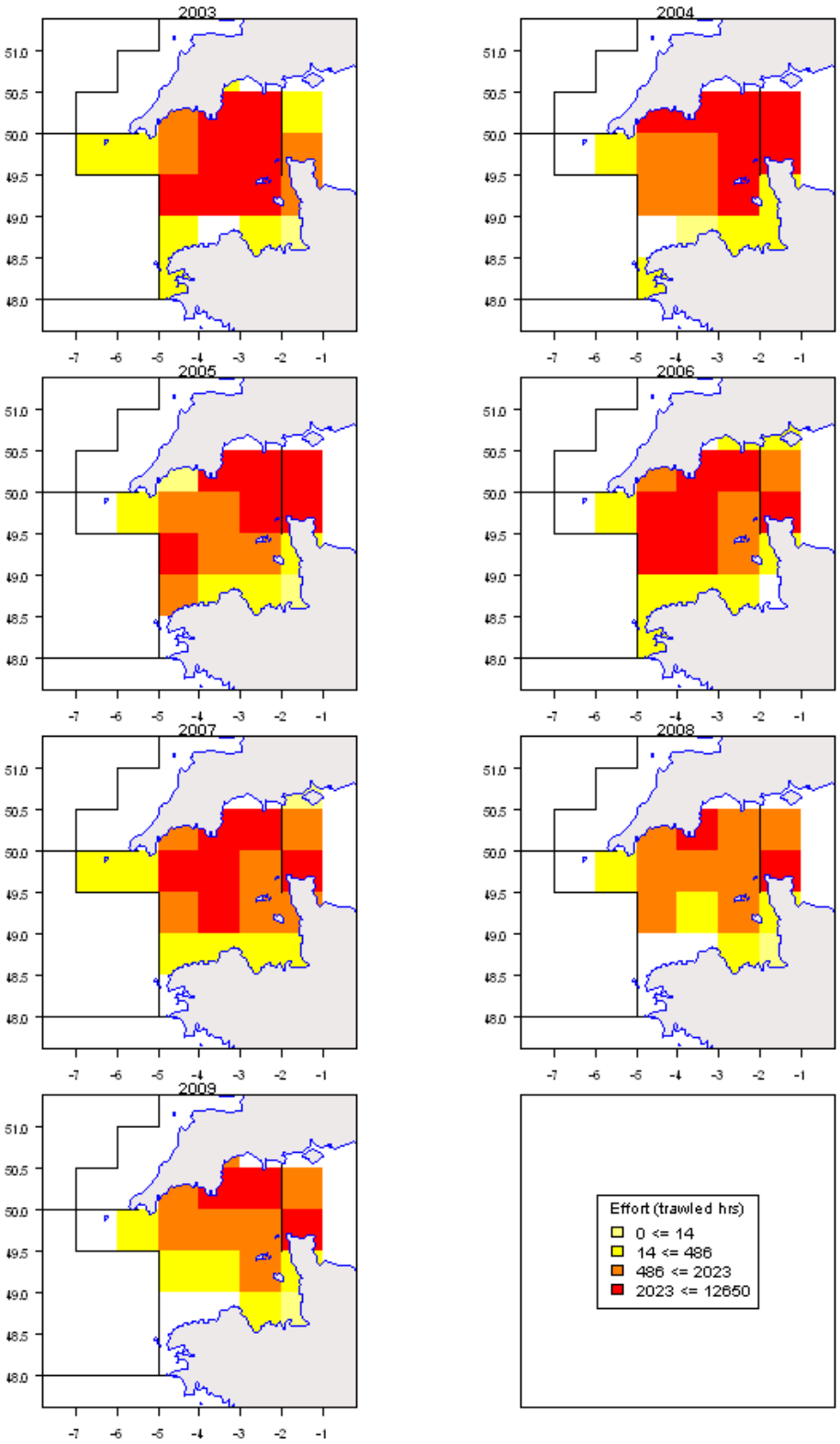


Figure 8.8.10. Western Channel. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Pelagic Trawl, 2003-2009.

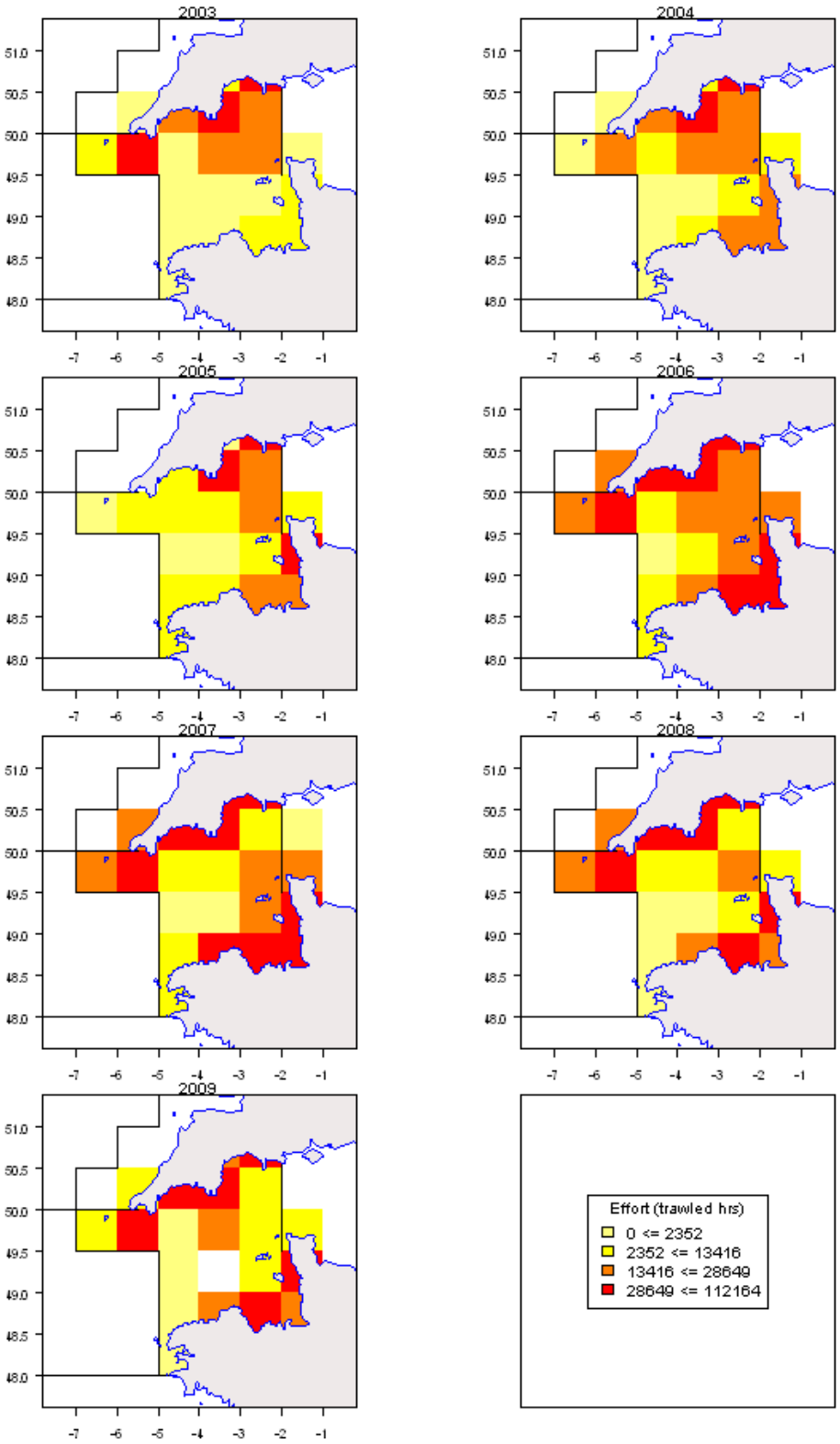


Figure 8.8.11. Western Channel. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Pots, 2003-2009.

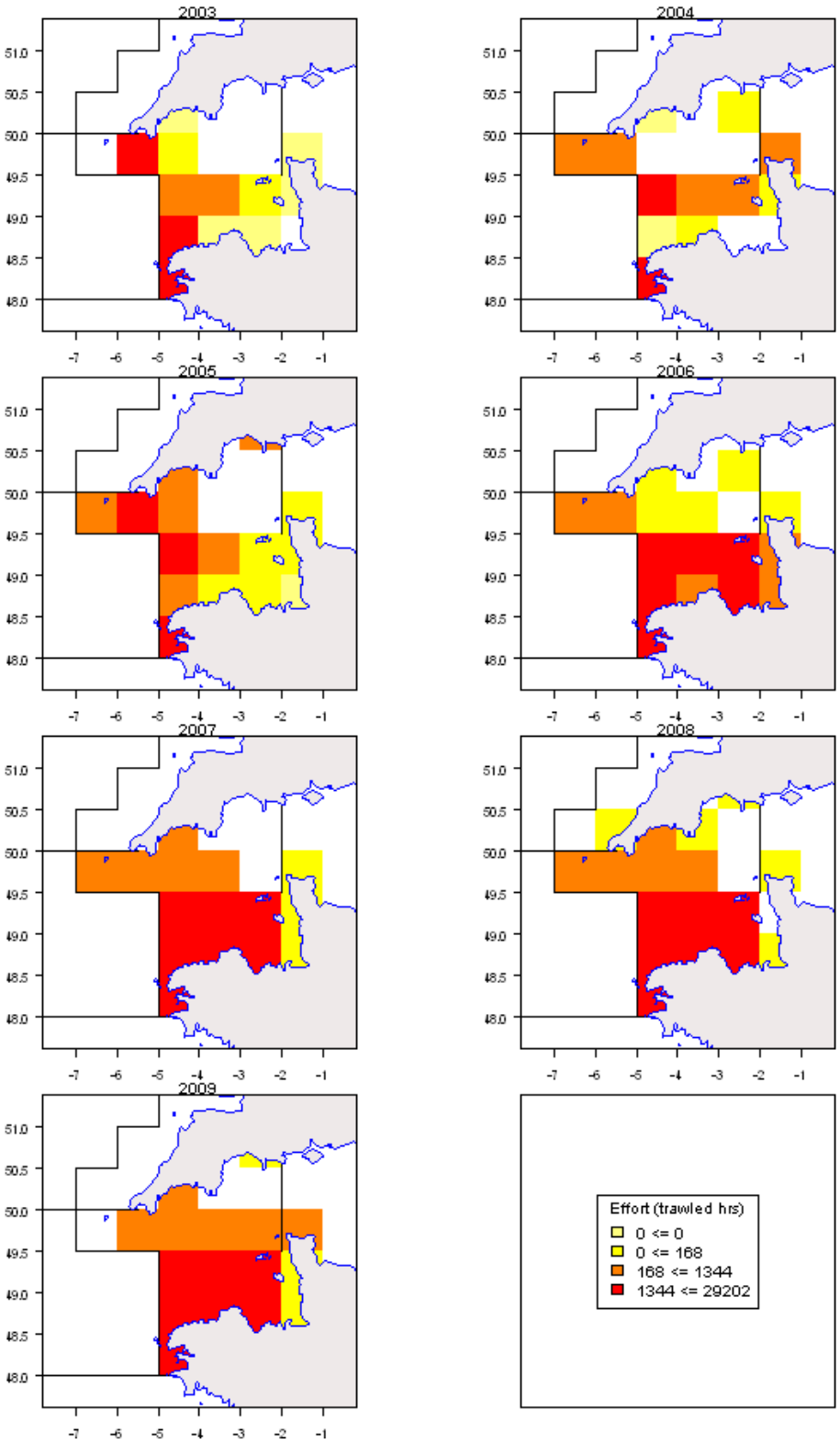


Figure 8.8.12. Western Channel. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Trammel nets, 2003-2009.

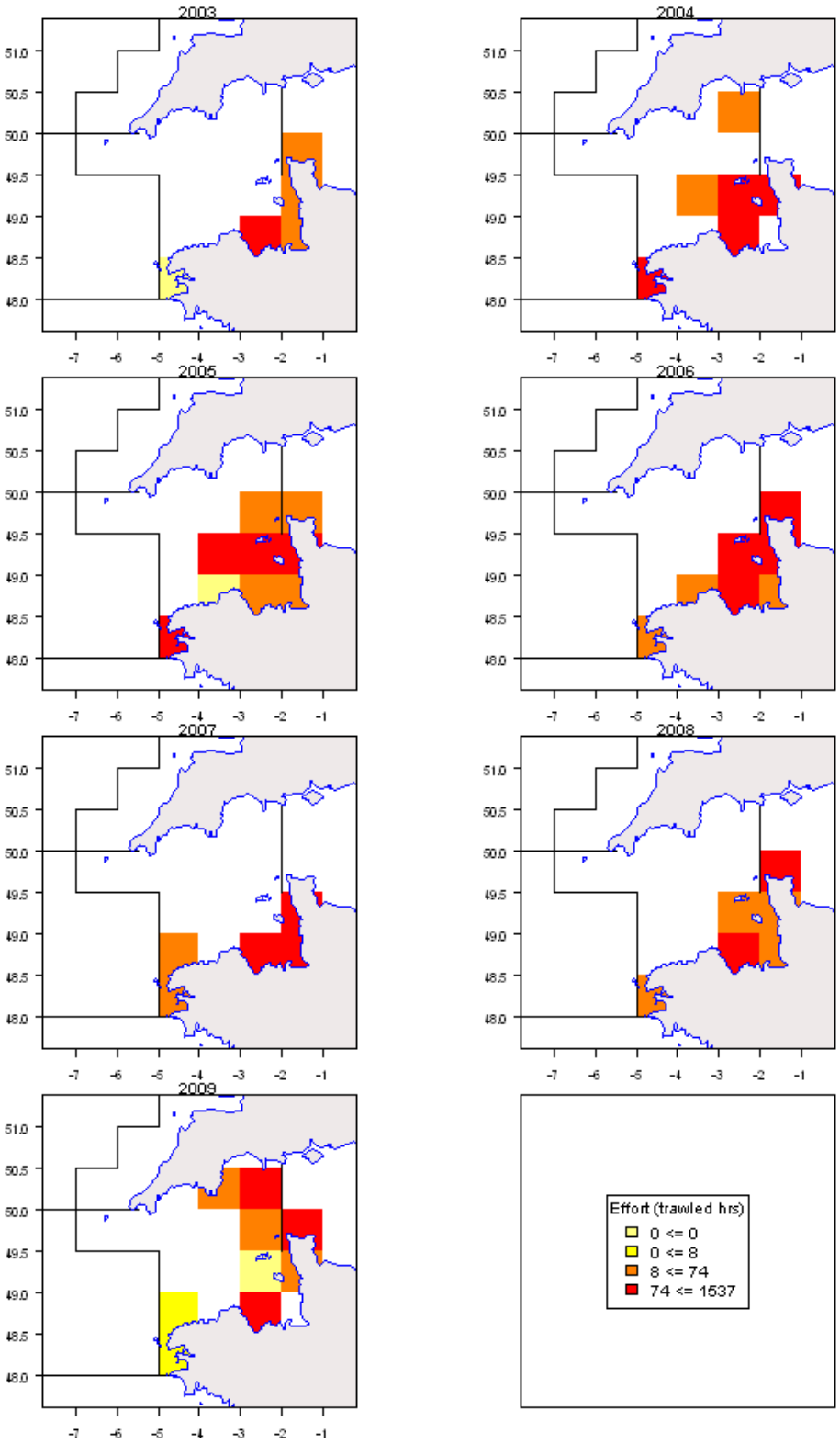


Figure 8.8.13. Western Channel. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for None ("none-none"), gears without mesh size given, 2003-2009.

9. CELTIC SEA

9.1. General

The Celtic Sea (ICES Divisions VIIbc,e-k) is not currently covered by the effort management scheme described under Annex II. However, the recent Commission proposals for the recovery of cod stocks within a revised recovery plan, also includes the Celtic Sea cod and puts forward ideas for an effort management regime to be applied in that area too.

It should be noted that the Celtic Sea cod stock definition covers ICES Divisions VIIe-k, while the cod in the ICES Divisions VIIb-c is considered to be the West Ireland stock. Landings of cod from the ICES Divisions VIIb-c are very low: 17 tonnes in 2009 are reported (ICES-WGCSE-2010). However, the overall fishing effort in that area, not dedicated to cod, may be large. This has to be kept in mind while looking at the results for the whole area. Some relevant information on Division VIIe is presented in Section 8 of the report as part of the Annex IIc regulation covering sole. Since cod in Division VIIe is included in the Celtic Sea definition, fishing effort and catches for that area are also considered in this section.

Data available for the Celtic Sea

Catch and effort data have been provided by all Member States excepted Spain.

Spanish data provided the previous years are now under revision, effort and catch time series need to be reconsidered before further complete analysis of the activity in this area.

All analyses were made this year without Spanish data.

The information on discards available to the Group is very partial and with the exception of the Belgian beam-trawlers (for which reliable estimates of discards have been provided), there is only some country-gear categories available for some years. In view of the small numbers of samples, the Group decided to consider landings per unit of effort only. However it should be kept in mind that discards reported to ICES have been substantial for some species and efforts to incorporate discards should be made in future. In that respect, available discard data are shown in the section dealing with total landings and discard but it should be kept in mind that these data are not exhaustive.

Métiers in the Celtic Sea

As for the areas covered by Annex IIa, the correspondence between gear-mesh size category and métier in the Celtic Sea may be not straightforward. For instance, the *Nephrops* métier in the Celtic Sea may be part of mesh-size category TR2 for Irish vessels, while for France this métier is contributed to by mesh-size category TR1.

Furthermore, even within a same gear and mesh-size category, the impact of fishing on cod may be very different. The following shows a description of the French metiers in the Celtic Sea and the impact of each on cod. Further details of the methodology can be found in Appendixes 4 and 5.

Table 9.1.1 Percentage of cod by French metiers for the 2000-2008.

Métier COD	2000	2001	2002	2003	2004	2005	2006	2007	2008	Average landings (t)
Bottom Trawls in the Celtic Sea to Benthic species	2.9%	4.6%	3.1%	2.1%	1.5%	1.1%	1.5%	1.7%	1.9%	354
Bottom Trawls in the Celtic Sea to Gadoids species	10.6%	15.2%	20.2%	14.8%	7.9%	5.4%	6.4%	10.3%	7.9%	2225
Bottom Trawls in the Celtic Sea to Nephrops	9.4%	11.6%	12.1%	11.2%	7.1%	5.5%	6.8%	9.9%	9.8%	757
Bottom Trawls in the Celtic Sea to Other species	1.9%	2.2%	1.9%	1.4%	0.7%	0.8%	1.1%	1.3%	1.4%	335
Nets in the Celtic Sea to Anglerfish	0.5%	0.4%	0.4%	0.4%	0.3%	0.2%	0.3%	0.2%	0.3%	9
Nets in the Celtic Sea to Hake	0.1%	0.8%	0.9%	0.4%	0.2%	0.5%	0.5%	1.1%	0.7%	23
Nets in the Celtic Sea to Sole	0.0%	0.0%	0.0%	0.0%	0.0%	0.9%	0.0%	0.0%	1.1%	0
Nets in the Celtic Sea to Other species	0.5%	0.5%	0.5%	0.6%	0.2%	0.2%	0.3%	0.2%	1.1%	13

A detailed review and explanation of the French métiers practiced in the Celtic Sea was made in the previous report (STECF. 2008. Report of the SGMOS-08-03 Working Group. Fishing effort regime (Sept. 2008)). The exploitation patterns have not changed and were not described in this report. In the context of a Cod recovery plan, given that cod is not uniformly abundant all over the Celtic Sea, it could be envisaged that a future effort regime could limit the fishing effort in a zone where the impact on the cod stock will be maximum.

Within the Celtic Sea, the landings of cod predominantly come from Divisions VIIf and VIIg. These areas contribute more than 70% to the total landings of cod from the Celtic Sea (Figures 9.1.1 and 9.1.2). Unfortunately, information on discards is too sparse to be taken into consideration.

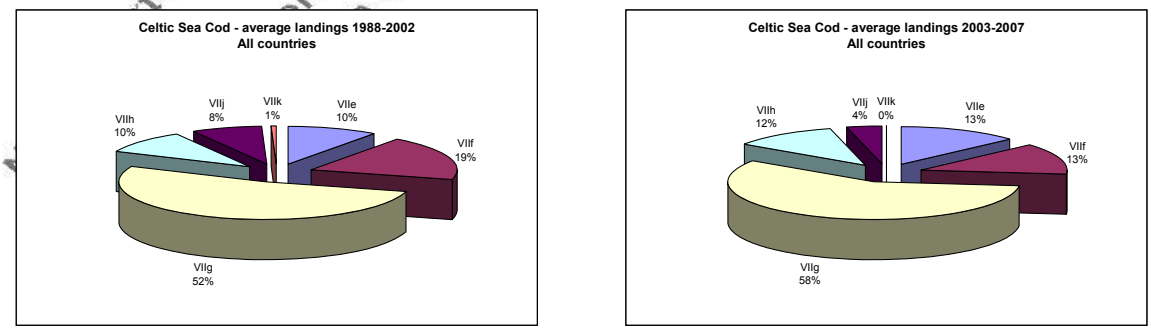


Figure 9.1.1. Contribution of each Division in the landings of cod (data from ICES-WGSSDS08)

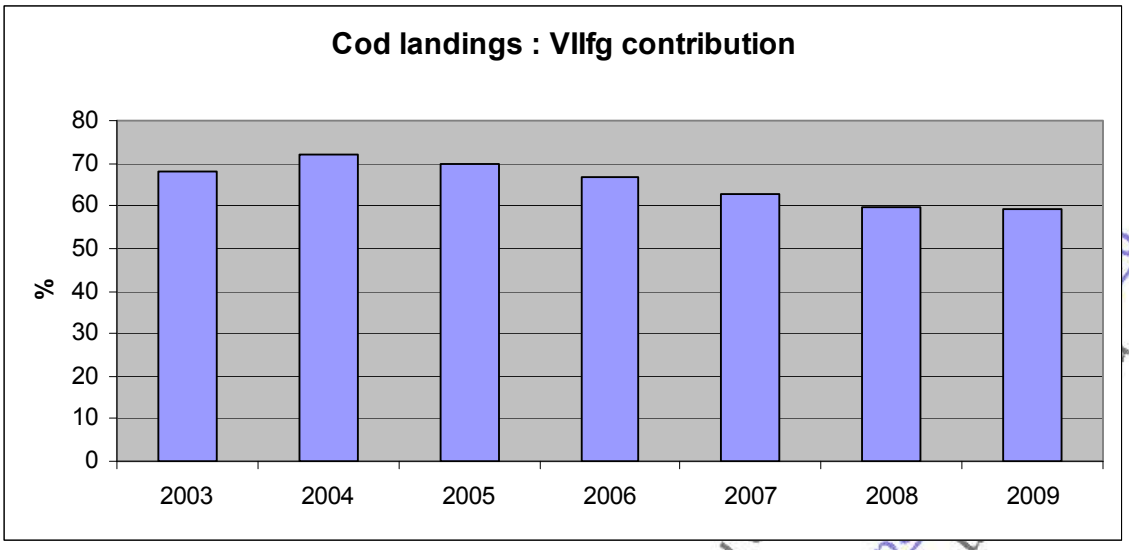


Figure 9.1.2.: Cod: Contribution of the landings from ICES Divisions VIIfg to the total landings from the Celtic Sea (ICES Divisions VIIbc,e-k) over 2003-2009

The average contribution of the Divisions VIIfg to the Celtic Sea landings of cod is about 65%. This contribution has been slightly decreasing in recent years (from 73% in 2004 to 60% in 2008 and 2009); this decrease is probably due to the implementation of the closure of the Trevose box since 2005.

In view of the observation that VIIfg area could be considered as the target area for a cod recovery plan, the European Commission specifically requested that STECF-SGMOS provide information for this. In each section the VIIfg (also called Cel2 in the text and figures) area is considered in addition to the whole Celtic Sea (VIIbc,e-k also called Cel1) to highlight the contribution of this area to the total effort and to the cod landings, with a presentation of the gear categories and metiers.

9.2. Nominal effort

Relative change to data in 2009:

The effort was calculated as in last year's report in kw*days at sea according to the specifications in Council Regulation (EC) N° 43/2009. But it appears to be significant differences between the two data sets which could be explain as follow :
Between submissions, the French **effort calculation was revised. French effort was previously computed as the rounding of fishing hours divided by 24, whereas it is now computed following the JRC's method.**

Table 9.2.1 Relative change to data in 2009.

ANNEX	REG AREA COD	REG GE/	SPECO	COUNTR	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cel1	7bcefghjk	BT1	none	BEL	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	BT1	none	ENG	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	BT1	none	IRL	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	BT2	none	BEL	0	0	0	0	0.002	0	0	0	0
Cel1	7bcefghjk	BT2	none	ENG	0	0	0	0	0	0	0	0	0.001
Cel1	7bcefghjk	BT2	none	FRA	23.178	1.324	10.334	0.268	1.096	0.667	2.117	1.301	-0.081
Cel1	7bcefghjk	BT2	none	GBJ	0	0	0	0	0	0.011	0	0	0
Cel1	7bcefghjk	BT2	none	IRL	0	0	0	0	0	0	0	0	0.011
Cel1	7bcefghjk	BT2	none	NED	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	BT2	none	SCO	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	GN1	none	BEL	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	GN1	none	ENG	0	0	0	0	0	0.034	0	0.002	0
Cel1	7bcefghjk	GN1	none	FRA	0.614	-0.092	1.37	-0.024	0.074	-0.096	-0.184	0.004	0.401
Cel1	7bcefghjk	GN1	none	GER	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	GN1	none	IRL	0	0	0	0	0	-0.001	-0.007	-0.006	-0.004
Cel1	7bcefghjk	GN1	none	SCO	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	GT1	none	ENG	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	GT1	none	FRA	1.189	0.353	3.874	0.713	0.408	0.484	1.228	1.549	0.218
Cel1	7bcefghjk	GT1	none	IRL	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	GT1	none	SCO	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	LL1	none	DEN	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	LL1	none	ENG	0	0	0	0	0	0	0	0	0.013
Cel1	7bcefghjk	LL1	none	FRA	1.44	0.186	7.546	1.374	3.535	4.495	3.247	0.902	0.836
Cel1	7bcefghjk	LL1	none	IRL	0	0	0	0	0	0	0	0	0.038
Cel1	7bcefghjk	LL1	NONE	POR	0	0	0	0	0	0	0		0
Cel1	7bcefghjk	LL1	none	SCO	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	none	none	BEL	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	none	none	DEN	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	none	none	ENG	0	0	0	0	0	0	0	0	0.012
Cel1	7bcefghjk	none	none	FRA	6.188	8.844	62.672	10.492	10.587	12.288	27.925	20.117	12.312
Cel1	7bcefghjk	none	none	GBG	0	0	0	0	0	0	0	0	-0.056
Cel1	7bcefghjk	none	none	GBJ	0	0	0	0	0	0	0	0	0.066
Cel1	7bcefghjk	none	none	GER	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	none	none	IOM	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	none	none	IRL	0	0	0	-0.002	-0.001	-0.003	-0.002	-0.002	0.007
Cel1	7bcefghjk	none	none	NED	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	none	none	NIR	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	none	none	SCO	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	TR1	none	ENG	0	0	0	0	0.002	0.006	0	0	-0.005
Cel1	7bcefghjk	TR1	none	FRA	-0.691	-0.682	0.197	-0.719	-0.67	-0.671	-0.666	-0.652	-0.627
Cel1	7bcefghjk	TR1	none	GBG	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	TR1	none	GBJ	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	TR1	none	IOM	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	TR1	none	IRL	0	0	0	0	0	0	0	0	0.007
Cel1	7bcefghjk	TR1	none	NED	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	TR1	none	NIR	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	TR1	none	SCO	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	TR2	none	BEL	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	TR2	none	ENG	0	0	0	0	0.002	0.003	0	0	0
Cel1	7bcefghjk	TR2	none	FRA	-0.607	-0.516	1.185	-0.402	-0.418	-0.479	-0.337	-0.272	-0.398
Cel1	7bcefghjk	TR2	none	GBG	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	TR2	none	GBJ	0	0	0	0	0	-0.221	-0.314	-0.272	-0.25
Cel1	7bcefghjk	TR2	none	IRL	0	0	0	0	0	0	0.002	0	0.006
Cel1	7bcefghjk	TR2	none	NED	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	TR2	none	NIR	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	TR2	none	SCO	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	TR3	none	DEN	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	TR3	none	ENG	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	TR3	none	FRA	-0.042	-0.355	3.298	-0.001	3.226	0	6.917	16.861	14.644
Cel1	7bcefghjk	TR3	none	IRL	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	TR3	none	NED	0	0	0	0	0	0	0	0	0
Cel1	7bcefghjk	TR3	none	SCO	0	0	0	0	0	0	0	0	0

Table 9.2.1 continued.

ANNEX	REG AREA COD	REG GE/	SPECO	COUNTR	2000	2001	2002	2003	2004	2005	2006	2007	2008
Cel2	7fg	BT1	none	ENG	0	0	0	0	0	0	0	0	0
Cel2	7fg	BT1	none	IRL	0	0	0	0	0	0	0	0	0
Cel2	7fg	BT2	none	BEL	0	0	0	0	0.011	0	0	0	0
Cel2	7fg	BT2	none	ENG	0	0	0	0	0	0	0	0	0
Cel2	7fg	BT2	none	FRA	0	0	0	0	0	-0.721	0		0
Cel2	7fg	BT2	none	GBJ	0	0	0	0	0	0	0	0	0
Cel2	7fg	BT2	none	IRL	0	0	0	0	0	0	0	0	0.012
Cel2	7fg	GN1	none	BEL	0	0	0	0	0	0	0	0	0
Cel2	7fg	GN1	none	ENG	0	0	0	0	0	0.01	0	0	0
Cel2	7fg	GN1	none	FRA	1.43	0.649	36.712	-0.361	-0.203	-0.782		0.058	-0.992
Cel2	7fg	GN1	none	IRL	0	0	0	0	0	0	0	0	0
Cel2	7fg	GN1	none	SCO	0	0	0	0	0	0	0	0	0
Cel2	7fg	GT1	none	ENG	0	0	0	0	0	0	0	0	0
Cel2	7fg	GT1	none	FRA	0	0	0	1.569	1.93	0	-0.415	-0.457	-0.614
Cel2	7fg	GT1	none	IRL	0	0	0	0	0	0	0	0	0
Cel2	7fg	LL1	none	ENG	0	0	0	0	0	0	0	0	0
Cel2	7fg	LL1	none	FRA	0	0	0	0	0	0	0	0	-0.543
Cel2	7fg	LL1	none	IRL	0	0	0	0	0	0	0	0	0
Cel2	7fg	LL1	none	SCO	0	0	0	0	0	0	0	0	0
Cel2	7fg	none	none	BEL	0	0	0	0	0	0	0	0	0
Cel2	7fg	none	none	ENG	0	0	0	0	0.003	0	0	0	0.017
Cel2	7fg	none	none	FRA	1.114	1.729	32.672	11.729	0	0	3.561	72.731	0
Cel2	7fg	none	none	GBG	0	0	0	0	0	0	0	0	0
Cel2	7fg	none	none	GBJ	0	0	0	0	0	0	0	0	0.066
Cel2	7fg	none	none	IOM	0	0	0	0	0	0	0	0	0
Cel2	7fg	none	none	IRL	0	0	0	0	0	0	0	0	0
Cel2	7fg	none	none	NED	0	0	0	0	0	0	0	0	0
Cel2	7fg	none	none	SCO	0	0	0	0	0	0	0	0	0
Cel2	7fg	TR1	none	ENG	0	0	0	0	0	0.026	0	0	0
Cel2	7fg	TR1	none	FRA	-0.659	-0.664	0.332	-0.733	-0.678	-0.657	-0.69	-0.654	-0.583
Cel2	7fg	TR1	none	IOM	0	0	0	0	0	0	0	0	0
Cel2	7fg	TR1	none	IRL	0	0	0	0	0	0	0	0	0.001
Cel2	7fg	TR1	none	NIR	0	0	0	0	0	0	0	0	0
Cel2	7fg	TR1	none	SCO	0	0	0	0	0	0	0	0	0
Cel2	7fg	TR2	none	BEL	0	0	0	0	0	0	0	0	0
Cel2	7fg	TR2	none	ENG	0	0	0	0	0	0	0	0	0
Cel2	7fg	TR2	none	FRA	-0.673	-0.201	3.804	0.361	3.172	1.573	2.168	3.258	5.792
Cel2	7fg	TR2	none	GBG	0	0	0	0	0	0	0	0	0
Cel2	7fg	TR2	none	GBJ	0	0	0	0	0	0	0	0	0
Cel2	7fg	TR2	none	IRL	0	0	0	0	0.001	-0.001	0.005	0	0.009
Cel2	7fg	TR2	none	NIR	0	0	0	0	0	0	0	0	0
Cel2	7fg	TR2	none	SCO	0	0	0	0	0	0	0	0	0
Cel2	7fg	TR3	none	ENG	0	0	0	0	0	0	0	0	0
Cel2	7fg	TR3	none	FRA	0.096	0.062	0	0	0	0	0	0	0
Cel2	7fg	TR3	none	IRL	0	0	0	0	0	0	0	0	0
Cel2	7fg	TR3	none	NED	0	0	0	0	0	0	0	0	0

Gear category and Member State

Even though there is at present no effort regulation in the Celtic Sea, the analysis below considered the same gear and mesh categories as used in other areas, as set in the cod recovery plan proposal. Table 9.2.1. and table 9.2.2 list the trends in effort by gear and mesh categories by country in kW*days.

The effort deployed in Gross tonnage days (GTdays) and number of vessels are not described in this report but can be found on the STECF SGMOS 10-05 website under the Final Report section: https://stecf.jrc.ec.europa.eu/meetings/2010?p_p_id=62_INSTANCE_Hk1G&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&p_p_col_id=column-2&p_p_col_count=1&_62_INSTANCE_Hk1G_struts_action=%2Fjournal_articles%2Fview&_62_INSTANCE_Hk1G_groupId=43805&_62_INSTANCE_Hk1G_articleId=44677&_62_INSTANCE_Hk1G_version=1.0

Table 9.2.2. Trend in effort (kW*days at sea), according to cod plan gear definition and Member State, 2000-2009. Note, data for Celtic Sea 7bcefghjk (Cel1) are shown first, followed by subset 7fg (Cel2).

Celtic Sea 7bcefghjk (Cel1)

ANNEX	REG AREA COD	REG GEAR COD	SPECON	COUNTRY	VESSEL_ LENGTH	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cel1	7bcefghjk	BT1	none	BEL	o15m									812	
Cel1	7bcefghjk	BT1	none	ENG	o15m					52079					
Cel1	7bcefghjk	BT1	none	IRL	o15m				14428						
Cel1	7bcefghjk	BT2	none	BEL	o15m	2033531	2038479	2286465	2914644	3927679	3394566	2823552	2932948	1986955	1932211
Cel1	7bcefghjk	BT2	none	ENG	o10t15m	56879	169147	144721	168607	72927	57373	53413	68457	68770	39504
Cel1	7bcefghjk	BT2	none	ENG	o15m	5408034	5570946	5247778	5871505	5623896	5626763	5225546	4943815	4253780	3822565
Cel1	7bcefghjk	BT2	none	FRA	o10t15m	19608	15582	14707	7217	27252	19355	99790	130720	55970	48196
Cel1	7bcefghjk	BT2	none	FRA	o15m		85561	181057	37869	290521	244545	206042	189856	90473	90473
Cel1	7bcefghjk	BT2	none	GBJ	o15m	173431	277324	278577	284450	365302	202229				
Cel1	7bcefghjk	BT2	none	IRL	o10t15m								187		
Cel1	7bcefghjk	BT2	none	IRL	o15m				3628194	2280127	2942708	2073221	1765762	1020052	915583
Cel1	7bcefghjk	BT2	none	NED	o15m	26478			22000						
Cel1	7bcefghjk	BT2	none	SCO	o15m								3666		1396
Cel1	7bcefghjk	GN1	none	BEL	o15m									2129	
Cel1	7bcefghjk	GN1	none	ENG	o10t15m	286060	342957	344063	368630	408264	321651	303347	273695	241386	271875
Cel1	7bcefghjk	GN1	none	ENG	o15m	1487816	1190148	1402935	1703645	1801520	1361727	664922	710075	482738	364708
Cel1	7bcefghjk	GN1	none	FRA	o10t15m	275261	273569	2213729	740936	1015940	904288	951675	917344	704412	704349
Cel1	7bcefghjk	GN1	none	FRA	o15m	807869	896164	2198446	1042726	1069302	1240069	996131	1258557	1535687	1535360
Cel1	7bcefghjk	GN1	none	GER	o15m	417051	391578	377303	371138	452381	396914	32794	171880	229650	93910
Cel1	7bcefghjk	GN1	none	IRL	o10t15m	73490	48050	33867	57332	66686	61406	75472	84989	104765	122164
Cel1	7bcefghjk	GN1	none	IRL	o15m	1544573	1282377	743429	947464	780583	602168	450629	462470	426097	415466
Cel1	7bcefghjk	GN1	none	NIR	o10t15m										2106
Cel1	7bcefghjk	GN1	none	SCO	o15m	450872	348860	250000	467260	643185	498868	192066	193116	355646	437451
Cel1	7bcefghjk	GT1	none	ENG	o10t15m	7301	1819		373	243	11051	7204	13030	17085	14082
Cel1	7bcefghjk	GT1	none	ENG	o15m	1709	3120	936	17903	40645	16189	63807	16867	20745	3249
Cel1	7bcefghjk	GT1	none	FRA	o10t15m	362480	428847	1376153	463009	613504	763828	906651	1057950	662533	662382
Cel1	7bcefghjk	GT1	none	FRA	o15m	140184	216520	1121650	299226	358319	438016	465337	471663	381102	381102
Cel1	7bcefghjk	GT1	none	IRL	o10t15m				802			4737	5471	9180	14663
Cel1	7bcefghjk	GT1	none	IRL	o15m		3885			172	16260	13560	18504	34885	22540
Cel1	7bcefghjk	GT1	none	SCO	o15m	74562	102966	112004	50501	13362					
Cel1	7bcefghjk	LL1	none	DEN	o15m			6993							
Cel1	7bcefghjk	LL1	none	ENG	o10t15m	138391	108211	74205	82631	64003	57687	69608	81526	63299	42273
Cel1	7bcefghjk	LL1	none	ENG	o15m	354301	326937	417981	318021	276751	265897	405536	575325	138810	4194
Cel1	7bcefghjk	LL1	none	FRA	o10t15m	41782	25673	327200	111426	153667	198527	350334	313997	139114	139114
Cel1	7bcefghjk	LL1	none	FRA	o15m	127040	84155	177620	123656	184636	206807	360284	410608	336703	336703
Cel1	7bcefghjk	LL1	none	IRL	o10t15m						4074	605	8642	15225	23396
Cel1	7bcefghjk	LL1	none	IRL	o15m	77156	133688	69300	83386	3600	68722	660	18092	8381	3956
Cel1	7bcefghjk	LL1	NONE	POR	o15m				3302						
Cel1	7bcefghjk	LL1	none	SCO	o10t15m						221				
Cel1	7bcefghjk	LL1	none	SCO	o15m	196263	298487	286098	136014	6160	50975	249936	257928	811319	194403
Cel1	7bcefghjk	none	none	BEL	o15m	39400	41286	36086	21681					17671	111781
Cel1	7bcefghjk	none	none	DEN	o15m	660889	513780	413879	293640	547907	594336	553811	967873	442695	770560
Cel1	7bcefghjk	none	none	ENG	o10t15m	1209544	1179516	1105939	1158611	1258193	1550747	1339494	1369088	1186674	1423892
Cel1	7bcefghjk	none	none	ENG	o15m	2215999	2338181	2540437	2171792	2206588	2089660	2402831	2390669	2386345	2479504
Cel1	7bcefghjk	none	none	FRA	o10t15m	1416926	1830934	12787875	3691906	5110484	5065828	5782705	5494277	3094070	3054033
Cel1	7bcefghjk	none	none	FRA	o15m	1887941	2533148	9586712	2721879	2987318	2776045	2885816	3177711	1955612	1952278
Cel1	7bcefghjk	none	none	GBG	o10t15m	67655	51787	8646					201	112	191
Cel1	7bcefghjk	none	none	GBG	o15m	43977	83277	2686		75868	56398	39402	67026	36910	53973
Cel1	7bcefghjk	none	none	GBJ	o15m	127744	146052	86529	55311	5248		19963		34730	11426
Cel1	7bcefghjk	none	none	GER	o15m	1189505	1029246	1217137	1243212	1259778	1003897	894497	1012370	1225530	1141045
Cel1	7bcefghjk	none	none	IOM	o10t15m									1689	
Cel1	7bcefghjk	none	none	IOM	o15m	13000	21775	19240				23622	1488		9840
Cel1	7bcefghjk	none	none	IRL	none										
Cel1	7bcefghjk	none	none	IRL	o10t15m	284383	343625	362743	99373	154831	131209	157801	351318	299998	282981
Cel1	7bcefghjk	none	none	IRL	o15m	12802515	13321997	14962724	2767822	4895742	2406731	1520688	2320118	2356107	3449195
Cel1	7bcefghjk	none	none	NED	o15m	7363782	6362540	5262640	5452874	5348836	4925416	4813371	4426746	6055935	4842897
Cel1	7bcefghjk	none	none	NIR	o15m	113924	71714	146089	162183	169317	176240	25667	51430	14170	34520
Cel1	7bcefghjk	none	none	SCO	o10t15m		425	728	3427	5066	23126	596			5364
Cel1	7bcefghjk	none	none	SCO	o15m	1455102	1797258	1577459	1144864	1804690	2246318	1052240	1459490	1646135	1446835

Table 9.2.2. continued.

Celtic Sea 7bcefghjk (Cel1)

ANNEX	REG AREA COD	REG GEAR COD	SPECON	COUNTRY	VESSEL_ LENGTH	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cel1	7bcefghjk	TR1	none	ENG	o10t15m	17059	54662	65325	51486	24379	12250	18271	30261	68970	105201
Cel1	7bcefghjk	TR1	none	ENG	o15m	389534	1460877	3406325	2383920	2237575	1791918	2209095	2274588	1591367	1245550
Cel1	7bcefghjk	TR1	none	FRA	o10t15m		3266	87847	18668	21245	24258	28074	19271	2627	2627
Cel1	7bcefghjk	TR1	none	FRA	o15m	4745042	6521242	31670939	7715939	7767596	7342415	7853011	7400986	6311684	6287869
Cel1	7bcefghjk	TR1	none	GBG	o10t15m								328	402	
Cel1	7bcefghjk	TR1	none	GBG	o15m			5811							
Cel1	7bcefghjk	TR1	none	GBJ	o15m		6396	2296							
Cel1	7bcefghjk	TR1	none	IOM	o15m	11967									
Cel1	7bcefghjk	TR1	none	IRL	o10t15m				402		4595	32698	12161	18276	26142
Cel1	7bcefghjk	TR1	none	IRL	o15m				5555942	4764153	4587954	3769997	3947570	3774294	3996363
Cel1	7bcefghjk	TR1	none	NED	o15m		735								
Cel1	7bcefghjk	TR1	none	NIR	o15m	7897	20675	12016	7641		716	5176		1141	1805
Cel1	7bcefghjk	TR1	none	SCO	o10t15m				600						36953
Cel1	7bcefghjk	TR1	none	SCO	o15m	162262	347400	792686	802171	879428	1084677	779453	681392	835556	869444
Cel1	7bcefghjk	TR2	none	BEL	o15m					104770	162244	376554	411132	406547	468989
Cel1	7bcefghjk	TR2	none	ENG	o10t15m	1603997	1451287	1314991	1399554	1465978	1433817	1490621	1518102	1475791	1506282
Cel1	7bcefghjk	TR2	none	ENG	o15m	5787558	3624454	825033	778265	793106	748269	545935	546165	188851	211851
Cel1	7bcefghjk	TR2	none	FRA	o10t15m	447838	457383	2723095	990647	1170583	934323	1811990	2322695	1359817	1332591
Cel1	7bcefghjk	TR2	none	FRA	o15m	6510657	8307813	41088422	9525729	9749701	10606401	9086047	8463099	5978693	5961053
Cel1	7bcefghjk	TR2	none	GBG	o10t15m						730	6042	11065	5203	3090
Cel1	7bcefghjk	TR2	none	GBG	o15m	15106	42207	27222				336			
Cel1	7bcefghjk	TR2	none	GBJ	o15m	69291	32364	36663	3557		6745	19360	30580	25740	31020
Cel1	7bcefghjk	TR2	none	IRL	none										
Cel1	7bcefghjk	TR2	none	IRL	o10t15m				289191	239187	335322	325095	434967	427596	531072
Cel1	7bcefghjk	TR2	none	IRL	o15m				4786076	4839643	6129868	5369633	5563245	4135139	2986641
Cel1	7bcefghjk	TR2	none	NED	o15m	2847	36507	36223	36589	64399	108566	162551	113951	90839	216240
Cel1	7bcefghjk	TR2	none	NIR	o10t15m										1832
Cel1	7bcefghjk	TR2	none	NIR	o15m	28717	2620	2184		53672	72432	42938	20658	131938	142224
Cel1	7bcefghjk	TR2	none	SCO	o10t15m				37584	76992	66156	5364	17582	162	9536
Cel1	7bcefghjk	TR2	none	SCO	o15m	1402569	945649	413810	451909	367030	352869	382627	350470	506435	485883
Cel1	7bcefghjk	TR3	none	DEN	o15m	11867		36892		15575					
Cel1	7bcefghjk	TR3	none	ENG	o10t15m	3019	1660	93	1157	559	220	1505	4986	7072	10318
Cel1	7bcefghjk	TR3	none	ENG	o15m	648	216	108	5112	432	2984		660	880	
Cel1	7bcefghjk	TR3	none	FRA	o10t15m		3432	9073	5832	5840	14923	17955	2179	7931	7931
Cel1	7bcefghjk	TR3	none	FRA	o15m	55719	38826			1146		3516	2304	1596	1596
Cel1	7bcefghjk	TR3	none	IRL	o10t15m								403	906	4665
Cel1	7bcefghjk	TR3	none	IRL	o15m				8499	8964	340	10012	3573	11035	12724
Cel1	7bcefghjk	TR3	none	NED	o15m	28392	5096								
Cel1	7bcefghjk	TR3	none	SCO	o10t15m					1192	4917				894
Cel1	7bcefghjk	TR3	none	SCO	o15m									5499	

Table 9.2.2 continued *subset 7fg (Cel2)*

ANNEX	EG AREA CO	GEAR (	SPECON	COUNTRY	SSEL_LEN	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Cel2	7fg	BT1	none	ENG	o15m					8 787					
Cel2	7fg	BT1	none	IRL	o15m				10 273						
Cel2	7fg	BT2	none	BEL	o15m	2 010 209	1 973 485	2 033 727	2 419 519	3 282 478	2 722 470	2 222 737	2 159 833	1440963	1570823
Cel2	7fg	BT2	none	ENG	o10t15m	13 039	54 781	43 428	60 008	42 075	9 779		676	7691	7891
Cel2	7fg	BT2	none	ENG	o15m	1 370 570	1 416 562	884 031	990 442	970 762	775 553	645 496	569 682	403865	408146
Cel2	7fg	BT2	none	FRA	o10t15m						2 200				
Cel2	7fg	BT2	none	FRA	o15m							15 965			
Cel2	7fg	BT2	none	GBJ	o15m	73 487	86 592	97 414	151 639	145 409	46 378				
Cel2	7fg	BT2	none	IRL	o10t15m								187		
Cel2	7fg	BT2	none	IRL	o15m				2 757 116	1 743 796	2 371 182	1 773 463	1 542 819	960802	839365
Cel2	7fg	GN1	none	BEL	o15m									1409	
Cel2	7fg	GN1	none	ENG	o10t15m	51 225	89 853	93 277	116 140	166 518	116 219	127 376	112 183	85832	88748
Cel2	7fg	GN1	none	ENG	o15m	358 551	223 562	406 656	310 997	347 111	323 813	278 118	265 198	223518	171258
Cel2	7fg	GN1	none	FRA	o15m	97 635	66 740	79 912	29 862	37 833	18 804		5 908	441	441
Cel2	7fg	GN1	none	IRL	o10t15m	59 427	34 141	30 370	32 348	49 730	44 009	52 760	42 748	55606	71817
Cel2	7fg	GN1	none	IRL	o15m	148 671	217 754	123 324	277 775	353 265	265 209	131 942	187 729	246401	162514
Cel2	7fg	GN1	none	SCO	o15m				689	721	1 337				
Cel2	7fg	GT1	none	ENG	o10t15m	55	428		373	243	4 630	5 447	5 497	4186	9217
Cel2	7fg	GT1	none	ENG	o15m		1 664	936	1 197	23 676	4 647	21 344	12 802	12273	2052
Cel2	7fg	GT1	none	FRA	o10t15m					1 458		7 683			
Cel2	7fg	GT1	none	FRA	o15m			8 064	8 456	801	14 256	20 068	21 032	19104	19104
Cel2	7fg	GT1	none	IRL	o10t15m				802				3 135	3620	6741
Cel2	7fg	GT1	none	IRL	o15m								6 508	8749	1544
Cel2	7fg	LL1	none	ENG	o10t15m	38 531	23 718	9 636	15 155	3 743	1 093	703	2 622	498	4673
Cel2	7fg	LL1	none	ENG	o15m	42 597	57 931	45 243	12 907	29 331	43 411	32 066	11 479	5879	215
Cel2	7fg	LL1	none	FRA	o15m			4 500			4 745		552	883	883
Cel2	7fg	LL1	none	IRL	o10t15m								3583	4986	3723
Cel2	7fg	LL1	none	IRL	o15m		1432				2167				
Cel2	7fg	LL1	none	SCO	o10t15m						221				
Cel2	7fg	LL1	none	SCO	o15m		886								
Cel2	7fg	none	none	BEL	o15m	39210	41286	35195	21681					7311	11138
Cel2	7fg	none	none	ENG	o10t15m	214912	275417	331573	424122	408788	496899	324344	404951	414939	451365
Cel2	7fg	none	none	ENG	o15m	127943	133481	55462	46127	109952	116181	90449	133746	167217	178813
Cel2	7fg	none	none	FRA	o15m	115827	96795	326385	43037	40436	36015	61169	40847	23492	23492
Cel2	7fg	none	none	GBG	o15m	1846	26319						20910	16433	20888
Cel2	7fg	none	none	GBJ	o15m	9876	26568	19068	984	3772				34730	11426
Cel2	7fg	none	none	GER	o15m										5299
Cel2	7fg	none	none	IOM	o10t15m									911	
Cel2	7fg	none	none	IOM	o15m		637	2262				3720	372		9840
Cel2	7fg	none	none	IRL	none										
Cel2	7fg	none	none	IRL	o10t15m	106755	137414	127792	23162	12175	10353	14062	28462	37409	25238
Cel2	7fg	none	none	IRL	o15m	5266943	5539182	5565895	856504	1453212	304598	188258	264787	242276	364782
Cel2	7fg	none	none	NED	o15m	13194	7040	17237	173084	115456	7210	47870	50829	4725	1628
Cel2	7fg	none	none	SCO	o10t15m		425								4470
Cel2	7fg	none	none	SCO	o15m	18071	7323	3196		2000	16246	39971	13036	21843	56979

Table 9.2.2 continued *subset 7fg (Cel2)*

Cel2	7fg	TR1	none	ENG	o10t15m	6196	40056	51698	23520	4919	3621	7115	3761	4872	7425
Cel2	7fg	TR1	none	ENG	o15m	18435	90107	112701	88239	117608	76471	79283	70737	96274	107621
Cel2	7fg	TR1	none	FRA	o15m	2614199	3456521	17034562	3460445	3326622	3113639	2740592	2475013	2303217	2295080
Cel2	7fg	TR1	none	IOM	o15m	11967									
Cel2	7fg	TR1	none	IRL	o10t15m				402		1455	29926	11211	16349	13532
Cel2	7fg	TR1	none	IRL	o15m				660312	676466	848385	1017017	1374554	1617605	1898900
Cel2	7fg	TR1	none	NIR	o15m	7897	20675	12016	7641		716	5176		1141	1805
Cel2	7fg	TR1	none	SCO	o10t15m										745
Cel2	7fg	TR1	none	SCO	o15m	979	11316	5266	9622	7701		9616	4479	12835	12332
Cel2	7fg	TR2	none	BEL	o15m					99934	152584	359224	396321	383484	449108
Cel2	7fg	TR2	none	ENG	o10t15m	187887	178191	169348	181115	154707	165360	257877	176637	225580	184298
Cel2	7fg	TR2	none	ENG	o15m	211818	146042	75092	96138	80260	86357	50874	55815	33883	40429
Cel2	7fg	TR2	none	FRA	o10t15m									3250	3250
Cel2	7fg	TR2	none	FRA	o15m	1016773	1117706	2777768	711296	593609	731407	287766	355358	227706	227706
Cel2	7fg	TR2	none	GBG	o15m			421							
Cel2	7fg	TR2	none	GBJ	o15m	742									
Cel2	7fg	TR2	none	IRL	o10t15m				133077	116163	152544	196727	229432	203843	197525
Cel2	7fg	TR2	none	IRL	o15m				2072329	2103502	3143480	2601602	2610042	2076419	1661508
Cel2	7fg	TR2	none	NIR	o10t15m										1832
Cel2	7fg	TR2	none	NIR	o15m	28717	2620	2184		52370	72432	42938	20658	127726	141738
Cel2	7fg	TR2	none	SCO	o10t15m									162	
Cel2	7fg	TR2	none	SCO	o15m	4865			4770	12285	4095	2828		2531	29426
Cel2	7fg	TR3	none	ENG	o10t15m		358			373					
Cel2	7fg	TR3	none	ENG	o15m						1119				
Cel2	7fg	TR3	none	FRA	o15m	23695	4770								
Cel2	7fg	TR3	none	IRL	o10t15m									324	
Cel2	7fg	TR3	none	IRL	o15m							720			1500
Cel2	7fg	TR3	none	NED	o15m	4368									

Celtic Sea all

Effort contributions by vessels from different nations are shown in (Figure 9.2.1). In terms of kW*days, France contributes 40 %, UK 20% Ireland 21%, the Netherlands 7%, Scotland 5% and Belgium 4% (average 2003-2009).

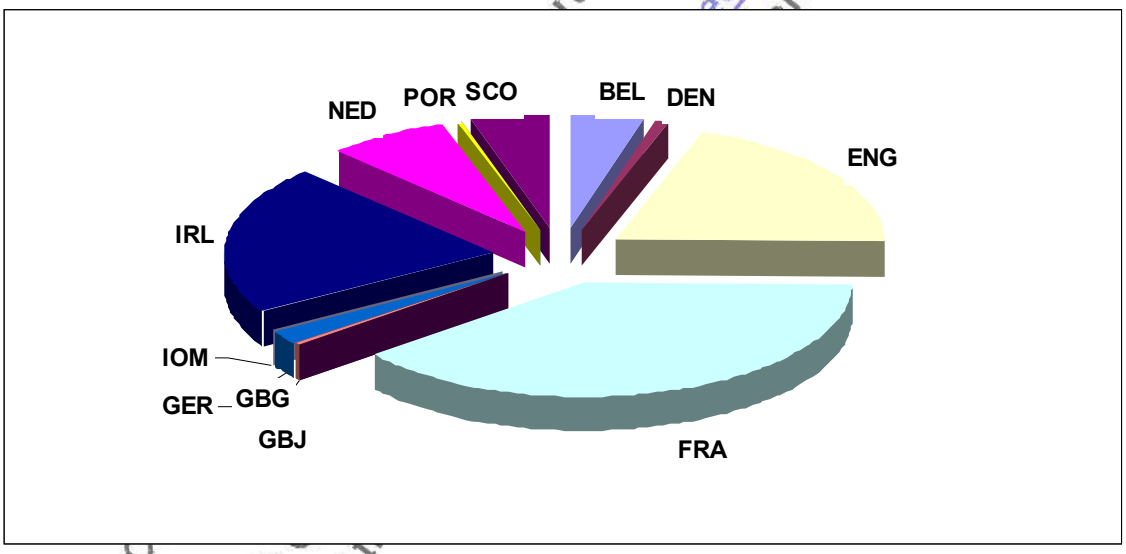


Figure 9.2.1. Contribution of each country to the total effort in the Celtic Sea (mean 2003-2009). Spanish effort is missing.

Effort in the overall Celtic Sea, combined across countries and summarized by regulated gears (as designated in those areas covered by the existing Annex IIa4 is shown in Table 9.2.4.

Table 9.2.4 Trend in effort (kW*days at sea), according to cod plan gear definition in the Celtic Sea (Cel 1 7bcefghjk), 2000-2009.

REG GEAR COD	SPECON	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Relative Change to 2003	Relative Change to 2008
BT1	none				14428	52079				812			
BT2	none	7717961	8157039	8153305	12934486	12587704	12487539	10481564	10035411	7476000	6849928	-0.47	-0.08
GN1	none	5342992	4773703	7563772	5699131	6237861	5387091	3667036	4072126	4084510	3947389	-0.31	-0.03
GT1	none	586236	757157	2610743	831814	1026245	1245344	1461286	1583485	1125530	1098018	0.32	-0.02
LL1	none	934933	977151	1359397	858436	688817	852910	1436963	1666118	1512851	744039	-0.13	-0.51
none	none	30892286	31676043	50117549	20988575	25829866	23045951	21512504	23089805	20754383	21070315	0.00	0.02
TR1	none	5333761	8415253	36043245	16536769	15694376	14848783	14695775	14366557	12604294	12571954	-0.24	0.00
TR2	none	15868580	14900284	46467643	18299101	18925055	20957742	19615293	19803611	14732751	13888304	-0.24	-0.06
TR3	none	99645	49230	46166	20600	33708	23384	32988	14105	34919	38128	0.85	0.09
Total		**66776394**	**69705860**	**152361820**	**76183340**	**81075711**	**78848744**	**72903409**	**74631218**	**62326050**	**60208075**	**-0.21**	**-0.03**

The mean proportion of total effort over the years 2003-2009 (in order to exclude years with no Irish disaggregated data) of each gear category (Figure 9.2.2) shows that "none" represent a third of the effort in this area and the other two main categories are TR1 and TR2. BT2 contribute to 14% on average to the reported fishing effort in 2003-2009.

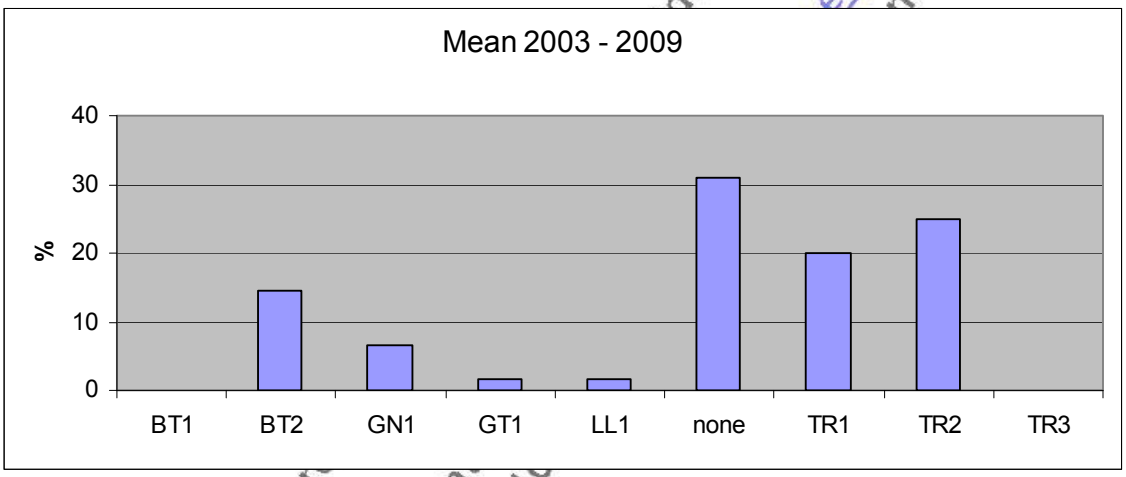


Figure 9.2.2. Contribution of each gear category to the total effort (kWdays) in the Celtic Sea (ICES Divisions VIIbc,e-k). Mean over 2003-2009. Spanish effort is missing.

The 'none' category means either that no information is available to allocate the effort data to a regulated gear in a mesh-size category or that there is no proposal to regulate that category of gear. This category accounts for around 39% in 2000-2002, when disaggregated Irish data are not available; this proportion fell to 30% since then and is stable since then.

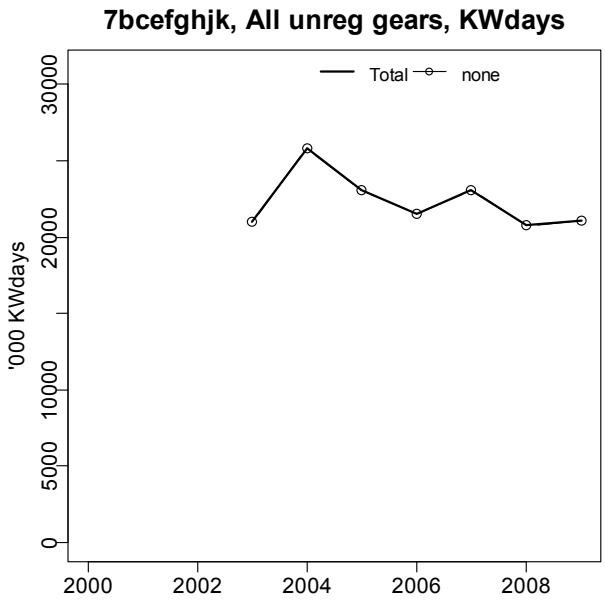
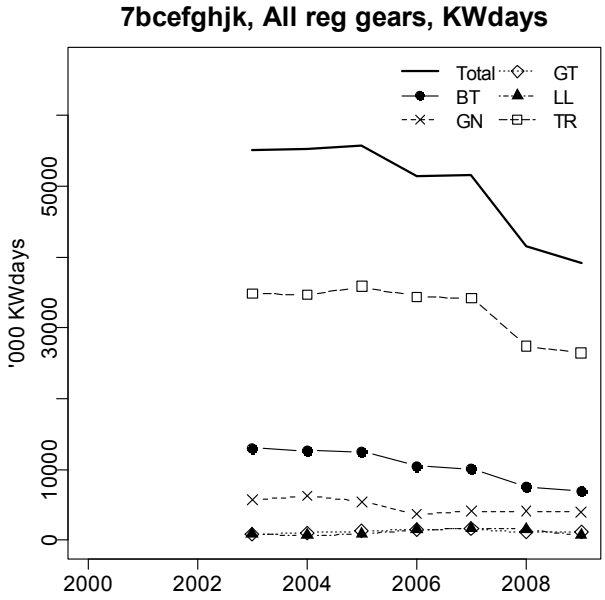


Fig. 9.2.3. Trend in nominal effort for gear-category 'none' in the Celtic Sea, 2003-2009.

Figures 9.2.4 to 9.2.9 show the recent trends in nominal effort for the various gear categories and mesh size in the Celtic Sea. Tables 9.2.1 to 9.2.3 provide details.

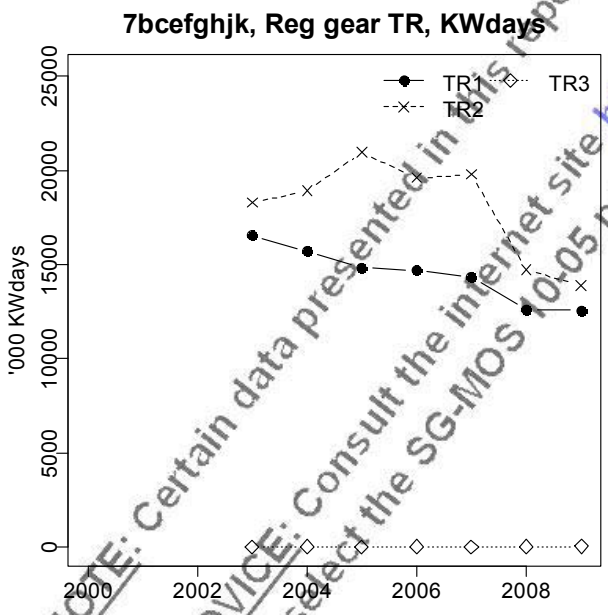
Total effort (Spanish data not available) has been decreasing since the start of the series. Most of the decrease in effort occurred in 2007.

Figures 9.2.5, 9.2.6 and 9.2.7 show the fishing effort for the whole gear categories. As for the total, the fishing effort of these gears (in kW*days) shows a decrease in recent years, especially for TR2.



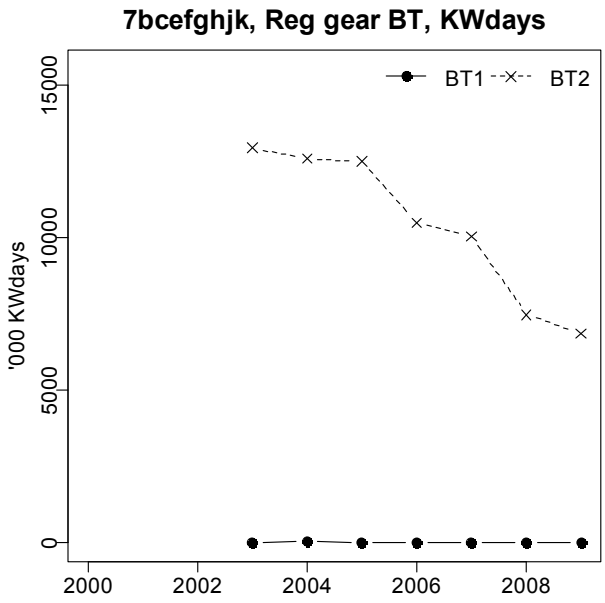
No Spanish data available

Fig. 9.2.4. Trend in nominal effort by gear types in the Celtic Sea (ICES Divisions VIIbc,e-k), 2003-2008.



No spanish data available

Fig. 9.2.5. Trend in nominal effort for demersal trawl (Regulated Gear TR1, TR2 and TR3) in the Celtic Sea (ICES Divisions VIIbc,e-k), 2003-2008.



No spanish data available

Fig. 9.2.6. Trend in nominal effort for beam trawl by mesh size range (Regulated Gear BT1, BT2) in the Celtic Sea (ICES Divisions VIIbc,e-k), 2000-2008.

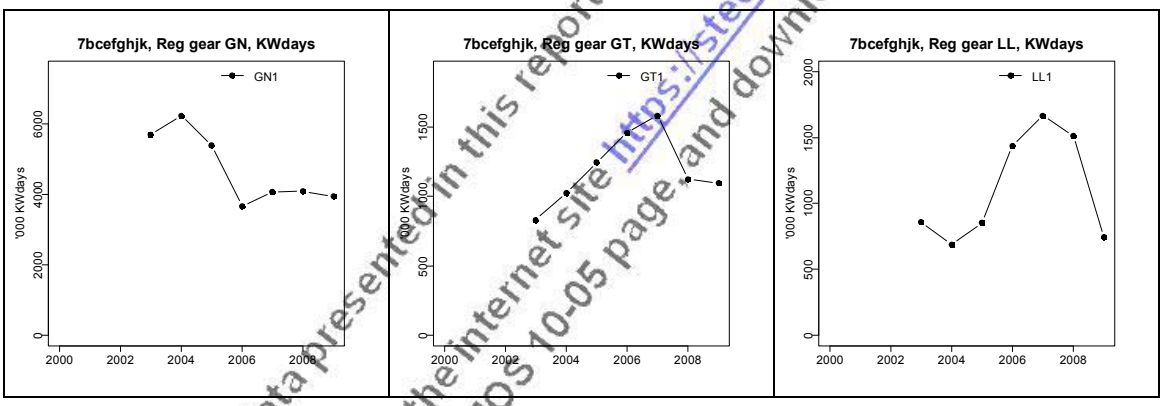


Fig. 9.2.7. Trend in nominal effort for Regulated Gear GT, GN1, LL1) in the Celtic Sea (ICES Divisions VIIbc,e-k), 2003-2008.

VIIfg – part of Celtic Sea

Contributions by different countries to overall effort in the smaller area, VIIfg are shown in (Figure 9.2.4.1). Vessels from Belgium, France, Ireland and UK(E-W) operate in the Divisions VIIfg. In terms of kW*days, Ireland contributes to 44%, France 23%, UK 14% and Belgium 18% (average 2003-2009).

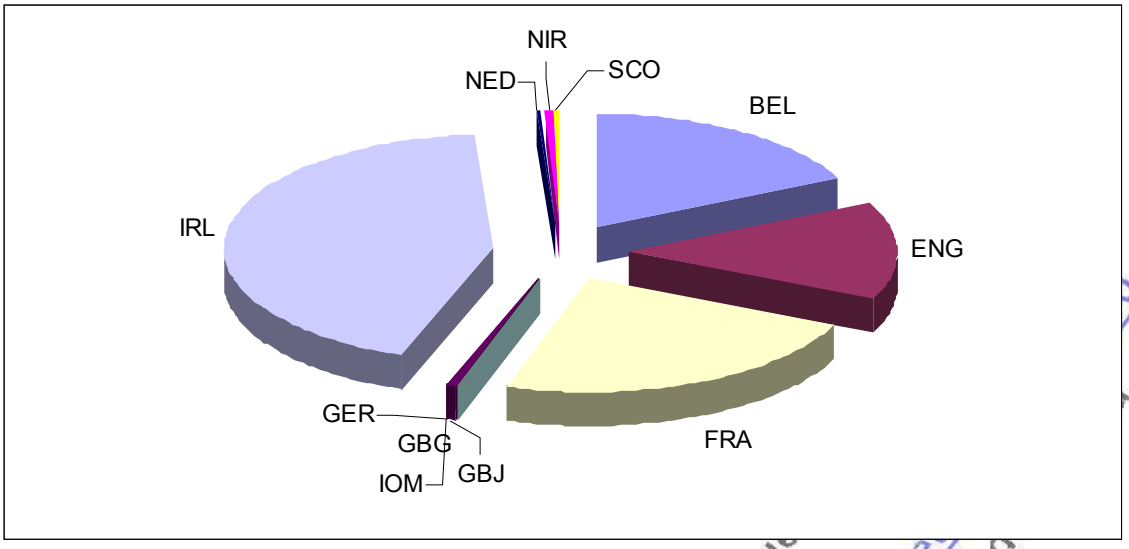


Figure 9.2.8. Contribution of each country to the total effort in the Divisions VIIfg (mean 2003-2009).

Effort combined across countries and summarized for different gear categories are given in Tables 9.2.6 and Tables 9.2.7.

Table 9.2.6 Trend in effort (kW*days at sea) by derogations existing in Appendix 1 of Annex IIA of Coun. Reg. 43/2009 and special condition (SPECON)in the ICES Divisions VIIfg, 2000-2008.

REG GEAR COD	SPECON	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Relative Change to 2003	Relative Change to 2008
BT1	none				10273	8787							NA
BT2	none	3467305	3531420	3058600	6378724	6184520	5927562	4657661	4273197	2813321	2826225	-0.56	0.00
GN1	none	715509	632050	733539	767811	955178	769391	590196	613766	613207	494778	-0.36	-0.19
GT1	none	55	2092	9000	10828	26178	23533	54542	48974	47932	38658	2.57	-0.19
LL1	none	81128	83967	59379	28062	33074	51637	32769	18236	12246	9494	-0.66	-0.22
none	none	5914577	6291887	6484065	1588701	2145791	987502	769843	957940	971286	1165358	-0.27	0.20
TR1	none	2659673	3618675	17246243	4250181	4133316	4044287	3888725	3939755	4052293	4337440	0.02	0.07
TR2	none	1450802	1444559	3024813	3198725	3212830	4508259	3799836	3844263	3284584	2936820	-0.08	-0.11
TR3	none	28063	5128			373	1119	720		324	1500	NA	NA
Total		14317112	15609778	30585639	16233305	16700047	16313290	13794292	13696131	11795193	11810273	**-0.27**	**0.00**

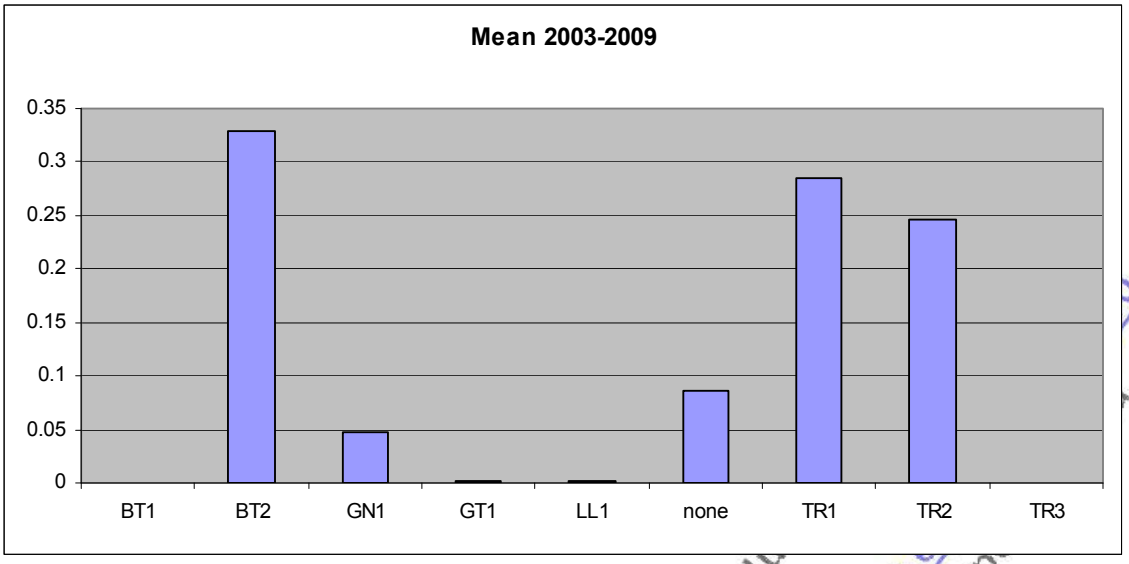
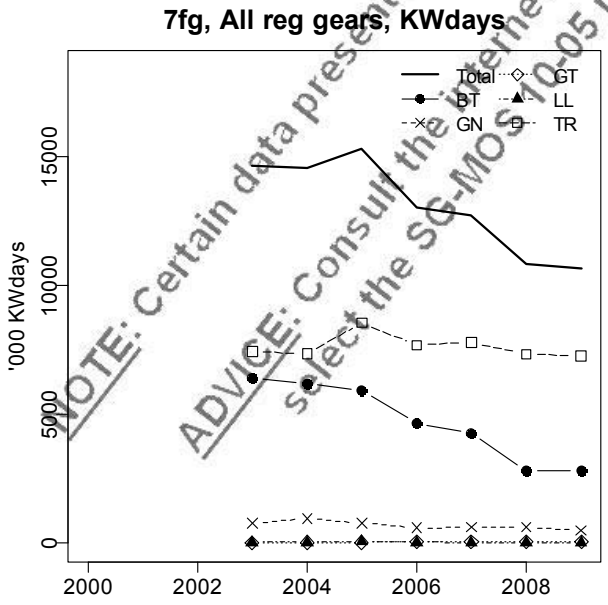


Figure 9.2.9. Contribution of each gear category (by derogations existing in Appendix 1 of Annex IIA of Coun. Reg. 43/2009 on the left panel to the total effort (kW*days) in the ICES Divisions VIIfg. Mean over 2003-2009.

The mean proportion of total effort over the period 2003-2009 (to exclude years with no Irish disaggregated data) of each gear category (Figure 9.2.9) shows that the fishery in this area is dominated (33%) by the BT2. TR1 and TR2 and contribute a further 28 and 24% respectively.

The changes made in the French effort calculation and the absence of Spanish data (both contributing to TR1) change the effort proportion of each gear observed last year. BT2 that are mainly operated by Irish boats are now dominating the fishery.



No Spanish data available

Fig. 9.2.10. Trend in nominal effort by gear types in the Celtic Sea (ICES Divisions VIIfg), 2003-2009.

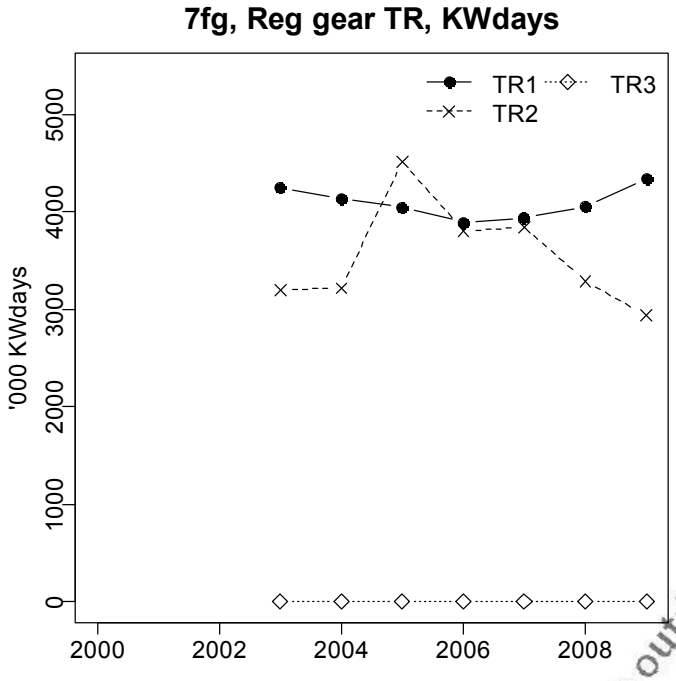


Fig. 9.2.11. Trend in nominal effort for demersal trawl (Regulated Gear TR1, TR2 and TR3) in the Celtic Sea (ICES Divisions VIIfg), 2003-2009.

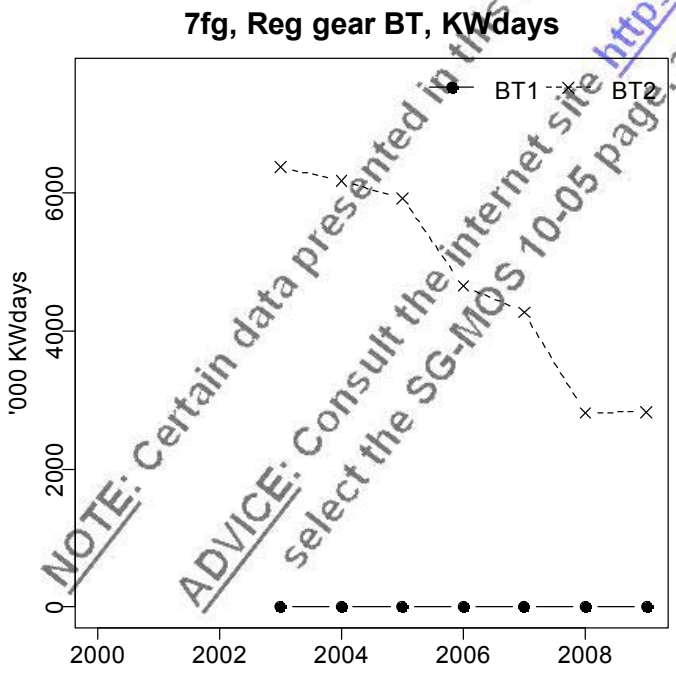


Fig. 9.2.12. Trend in nominal effort for beam trawl by mesh size range (Regulated Gear BT1, BT2) in the Celtic Sea (ICES Divisions VIIfg), 2000-2008.

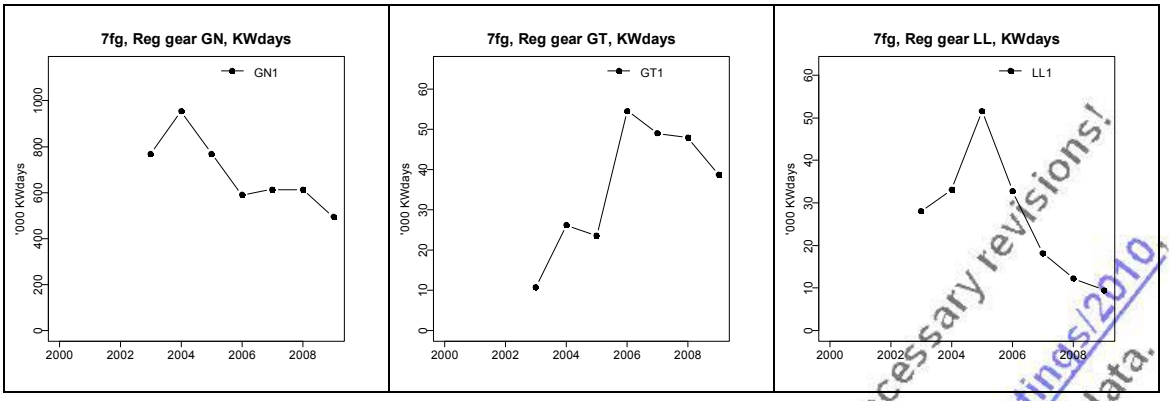


Fig. 9.2.13. Trend in nominal effort for beam trawl by mesh size range (Regulated Gear GT, GN1, LL1) in the Celtic Sea (ICES Divisions VIIfg), 2003-2009.

The total effort in area VIIfg has decreased by 27% since 2003. This decrease is mostly due to BT2 (a reduction of 56%).

Comparison between the two different area designations

The contributions to the total effort of the Celtic Sea as a whole (ICES Divisions VIIbc,e-k) and for the restricted area VIIfg differ depending of the country. England contributes less to the total in VIIfg (14%) than to the total Celtic Sea (20%). This is the opposite for Ireland which contributes 44% to the total in VIIfg but 21% in the whole Celtic Sea, and to a lesser extent Belgium (18% and 4% respectively). The contribution of France in Cel1 area is around 40% but only 24% in Cel2.

9.3. Catch estimates in the Celtic Sea area

Introduction

This year, a number of figures were included in the report, displaying total landings (white) and discards (grey – when available) in weight for all regulated gears from 2003 to 2009 (Figures 9.3.1), as well as in landings and discards in numbers at age for cod (Figures 9.3.2).

Because of the limited availability and reliability of discard information for some species and from some countries contributing landings information to the dataset, care is required in the use of these data to draw firm conclusions about catch composition. In addition, the procedure used to raise discards and explained in section 5.3 may not be fully consistent with the procedures used in other contexts and therefore may not be directly comparable.

Table 9.3.1.1a. Landings of anglerfish by category. Left: Celtic Sea, Right : Divisions VIIfg

Reg Area	7bcdefghijk							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
ANF	BT1	1	11					
	BT2	2338	2831	2876	2942	3232	2446	2467
	GN1	1915	2381	2824	1582	2261	3098	3059
	GT1	803	1284	1448	1094	1245	1253	1249
	LL1	9	1	6	0	2	0	0
	none	168	402	164	150	138	78	112
	TR1	4689	4705	4112	5626	6023	4946	5490
	TR2	4526	4578	4812	4246	4713	3519	3308
	TR3	2	0	0	7		0	0

Reg Area	7 fg							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
ANF	BT1	1	1					
	BT2	1164	1310	1163	1194	1149	804	842
	GN1	110	161	136	83	61	60	94
	GT1	6	7	19	30	18	26	30
	LL1	0	0	0	0	0	0	0
	none	45	123	6	15	6	8	5
	TR1	964	820	578	736	810	825	918
	TR2	403	448	513	496	645	581	479
	TR3			0	0		0	

Table 9.3.1.1b. Landings of cod by category. Left: Celtic Sea, Right : Divisions VIIfg

Reg Area	7bcdefghijk							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
COD	BT1		1				0	
	BT2	301	328	449	352	323	222	184
	GN1	139	175	202	216	222	178	183
	GT1	14	9	12	8	10	13	12
	LL1	15	5	4	20	3	3	2
	none	31	86	6	4	6	12	6
	TR1	2541	1275	808	914	994	900	963
	TR2	1056	568	781	853	858	722	668
	TR3	0	0	0	0		0	0

Reg Area	7 fg							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
COD	BT1		0					
	BT2	222	249	347	269	224	154	114
	GN1	77	131	164	170	174	143	133
	GT1	1	0	1	1	3	2	2
	LL1	1		2	2	0		0
	none	25	77	4	3	2	6	1
	TR1	2078	1023	626	677	753	618	671
	TR2	381	288	438	461	361	303	276
	TR3			0	0			

Table 9.3.1.1c. Landings of haddock by category. Left: Celtic Sea, Right : Divisions VIIfg

Reg Area	7bcdefghijk							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
HAD	BT1	0	1					
	BT2	365	410	485	344	344	303	374
	GN1	140	134	142	102	115	89	102
	GT1	0	0	0	0	2	0	1
	LL1	8	9	15	14	8	1	0
	none	64	254	32	15	16	26	5
	TR1	3365	4088	2714	2200	2963	3693	4577
	TR2	1734	1505	1644	1381	1528	1394	1792
	TR3	3	1	1	3	3	2	4

Reg Area	7 fg							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
HAD	BT1	0	0					
	BT2	265	324	396	298	286	240	281
	GN1	68	96	90	57	74	68	68
	GT1	0	0	0	0	1	0	0
	LL1	0	1	1	1	0		0
	none	36	162	14	7	5	9	3
	TR1	1985	2985	1863	1296	1900	2206	2683
	TR2	567	714	911	728	683	533	811
	TR3			0	0			

Table 9.3.1.1d. Landings of hake by category. Left: Celtic Sea, Right : Divisions VIIfg

Reg Area	7bcdefghijk							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
HKE	BT1	0	0					
	BT2	111	82	77	78	71	46	54
	GN1	1992	2111	1910	1578	1383	1149	1692
	GT1	5	3	5	7	6	4	2
	LL1	45	25	69	527	1080	1388	532
	none	31	74	16	2	23	8	16
	TR1	1511	1554	1786	1618	1619	1264	1246
	TR2	575	555	593	461	421	387	334
	TR3	0	0	0	0			0

Reg Area	7 fg							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
HKE	BT1	0	0					
	BT2	77	56	56	60	59	30	29
	GN1	309	348	402	192	264	411	472
	GT1	0	0	0	3	3	2	0
	LL1	0	5	3	1			
	none	13	44	1	0	1	1	0
	TR1	179	172	159	193	235	252	273
	TR2	138	137	130	127	117	109	83
	TR3			0	0			

Table 9.3.1.1e. Landings of Nephrops by category. Left: Celtic Sea, Right : Divisions VIIfg

Reg Area	7bcdefghijk							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
NEP	BT1	0						
	BT2	78	96	105	93	87	35	34
	GN1	1	16	15	5	0	4	2
	GT1	1		0	0	0	0	0
	LL1	1						
	none	87	426	110	37	53	79	26
	TR1	1276	1276	1690	1386	1440	1730	1899
	TR2	3379	2696	4039	3416	5234	4975	3537
	TR3	9			2			

Reg Area	7 fg							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
NEP	BT1	0						
	BT2	67	79	88	86	84	33	33
	GN1	0	13	10	4	0	4	2
	GT1	1						
	LL1							
	none	54	338	12	27	22	65	15
	TR1	831	691	854	745	885	1364	1519
	TR2	2057	1721	2527	1862	3156	3216	2350
	TR3				0			

Table 9.3.1.1 f. Landings of plaice by category. Left: Celtic Sea, Right : Divisions VIIfg

Reg Area	7bcdefghijk							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
PLE	BT1		0				23	
	BT2	1187	1149	1001	945	784	704	786
	GN1	4	10	7	4	3	3	6
	GT1	9	16	22	12	8	3	3
	LL1	0	0	0	0	0	0	0
	none	26	39	37	17	16	14	25
	TR1	192	145	103	94	96	137	162
	TR2	458	389	416	468	411	437	434
	TR3	0	0	0	1	2	1	4

Reg Area	7 fg							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
PLE	BT1		0					
	BT2	292	253	194	173	185	143	173
	GN1	0	1	1	1	0	0	0
	GT1	0	0	0	0	0	0	0
	LL1	0					0	0
	none	8	6	2	1	1	0	2
	TR1	135	102	72	58	67	97	102
	TR2	72	68	66	96	99	127	126
	TR3			0				

Table 9.3.1.1g. Landings of saithe by category. Left: Celtic Sea, Right : Divisions VIIfg

Reg Area	7bcdefghijk							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
POK	BT1		0					
	BT2	14	15	11	3	1	1	2
	GN1	408	331	283	197	200	134	221
	GT1	1	0	1	1	6	4	0
	LL1	0	1	2	0	4	0	0
	none	22	72	5	1	0	3	16
	TR1	247	595	173	195	205	142	170
	TR2	141	109	94	40	48	18	20

Reg Area	7 fg							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
POK	BT1		0					
	BT2	12	13	10	3	1	1	1
	GN1	179	205	149	112	120	76	126
	GT1	0	0	0	0	3	1	0
	LL1		0	0	0		0	0
	none	7	44	0		0	0	0
	TR1	84	45	35	33	31	20	20
	TR2	44	55	66	24	22	6	8

Table 9.3.1.1h. Landings of sole by category. Left: Celtic Sea, Right : Divisions VIIfg

Reg Area	7bcdefghijk							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
SOL	BT1	0	1					
	BT2	1474	1413	1549	1393	1355	1127	1033
	GN1	14	24	17	7	12	15	19
	GT1	39	43	77	41	47	33	33
	LL1	0	0	0	0	0	0	0
	none	58	60	98	54	68	48	43
	TR1	127	92	86	74	73	80	80
	TR2	372	320	366	387	414	359	379
	TR3	0	0	0	0	0	0	1

Reg Area	7 fg							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
SOL	BT1	0	0					
	BT2	1010	965	841	731	748	609	622
	GN1	2	1	1	2	1	0	0
	GT1		2	0	0	0	0	
	LL1	0		0	0			
	none	4	5	3	2	5	0	2
	TR1	77	43	39	33	39	34	34
	TR2	37	51	60	78	86	78	100
	TR3			0				

Table 9.3.1.1 i. Landings of whiting by category. Left: Celtic Sea, Right : Divisions VIIfg

Reg Area	7bcdefghijk							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
WHG	BT1	0	0					
	BT2	276	253	280	130	148	138	92
	GN1	135	118	93	42	37	36	30
	GT1	1	0	1	1	4	0	0
	LL1	3	5	5	11	7	2	1
	none	287	687	60	60	30	53	15
	TR1	4730	3983	5092	4166	3221	2524	3146
	TR2	4561	4149	6467	4625	5079	2666	2698
	TR3	0	0	0	1	0	0	3

Reg Area	7 fg							
SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
WHG	BT1	0	0					
	BT2	184	181	219	82	101	88	52
	GN1	51	90	39	13	17	14	10
	GT1	0	0	0	0	0	0	0
	LL1	0	0	0	0	0	0	
	none	224	597	17	49	12	20	3
	TR1	3559	3236	4222	3513	2645	1916	2316
	TR2	2143	2481	4832	3344	3575	1144	971
	TR3			0	1			

Celtic Sea overall area, all species

Figure 9.3.1. shows that landings from the Celtic Sea are dominated by anglerfish and hake. Whiting, haddock and Nephrops also contribute substantially.

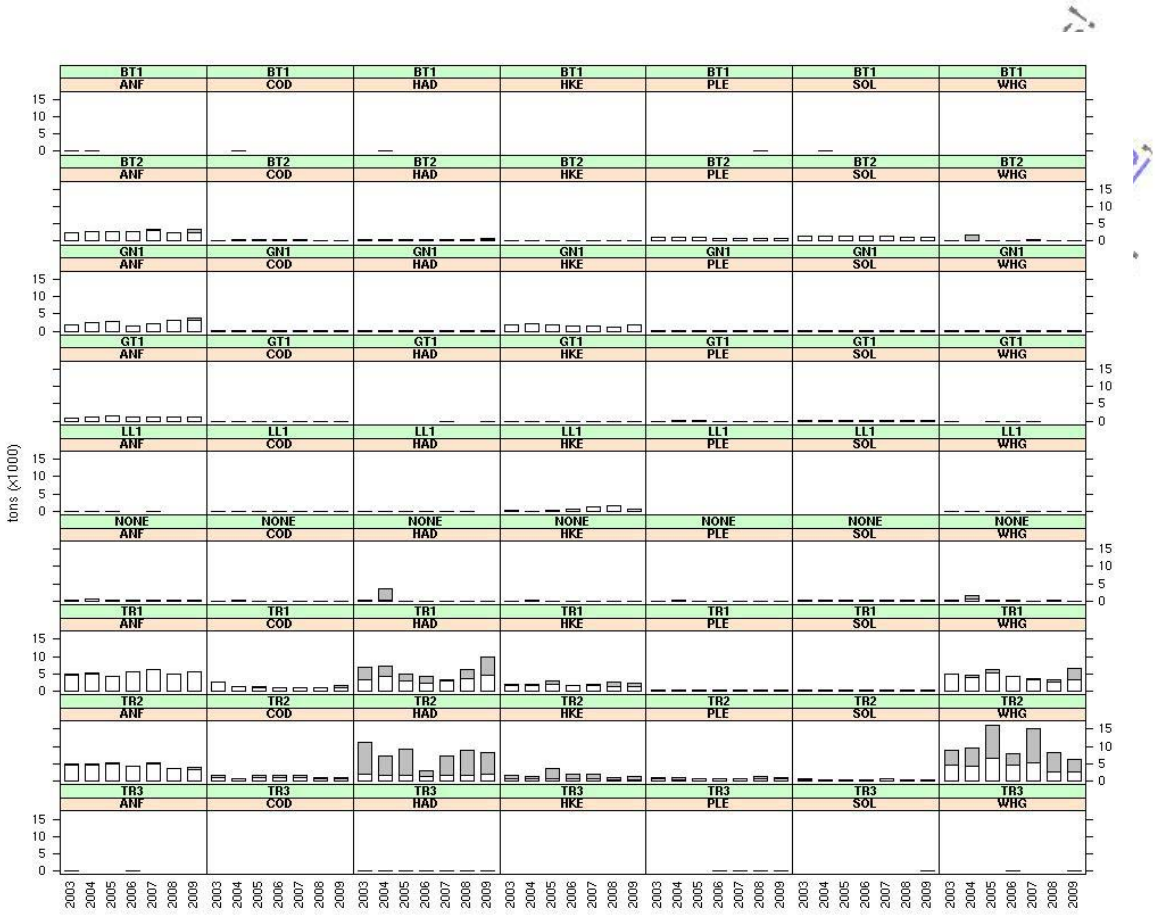


Figure 9.3.1. Landings (t) (in white) and discard (t) (in grey) by gear grouping and species, 2003-2009 (from left to right) in the Celtic Sea (ICES Divisions VIIbc,e-k). Note that discard data are only available for some species and gears, so the lack of discard information for a given species/gear in the graphs means no information rather than zero discards. Furthermore, due to the limited availability and reliability of discard information for some species and from some countries contributing landings information to the dataset, care is required in the use of these data to draw firm conclusions about catch composition.

Cod landings

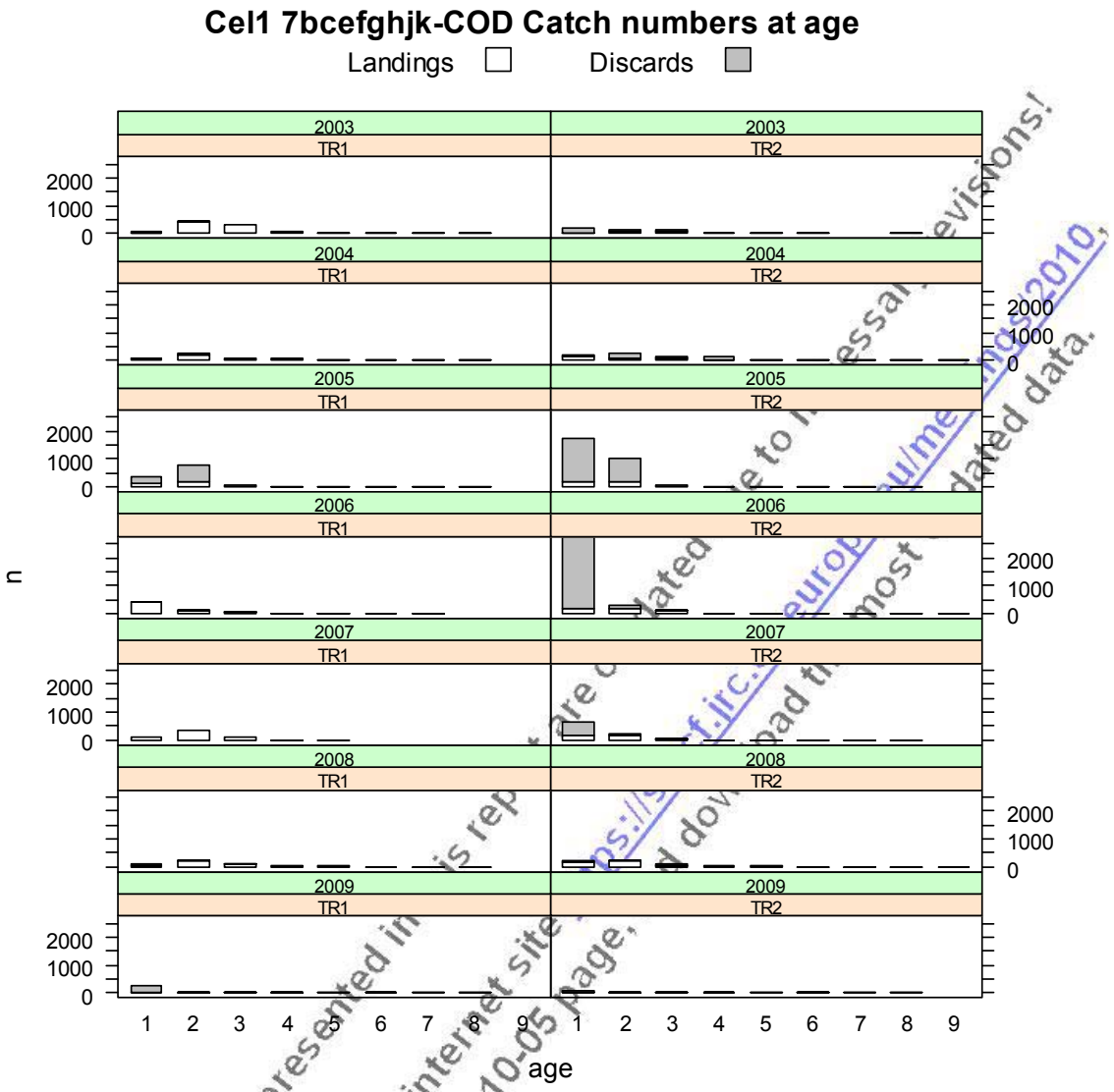


Figure 9.3.2. Continued Landings (t) (in white) and discard (t) (in grey) for Cod by age and gear grouping, 2003-2009 in the Celtic Sea (ICES Divisions VIIbc,e-k). Note that discard data are only available for some years and gears, so the lack of discard information for a given year/gear in the graphs means no information rather than zero discards. Furthermore, due to the limited availability and reliability of discard information for some years and from some gears contributing landings information to the dataset, care is required in the use of these data to draw firm conclusions about catch composition.

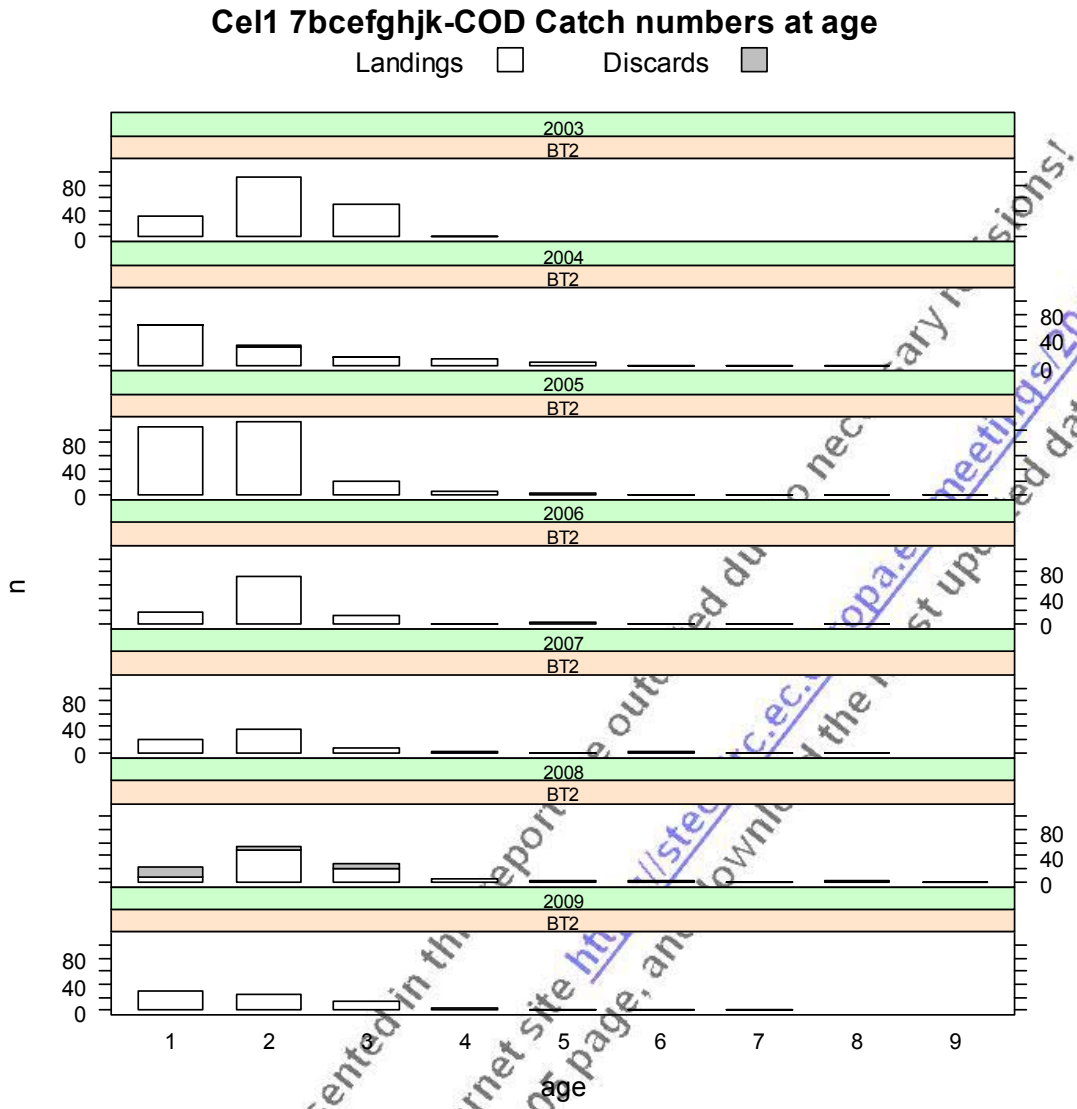


Figure 9.3.2. Continued Landings (t) (in white) and discard (t) (in grey)for cod by age and gear grouping, 2003-2009 in the Celtic Sea (ICES Divisions VIIbc,e-k). Note that discard data are only available for some years and gears, so the lack of discard information for a given years/gear in the graphs means no information rather than zero discards. Furthermore, due to the limited availability and reliability of discard information for some years and from some gears contributing landings information to the dataset, care is required in the use of these data to draw firm conclusions about catch composition.

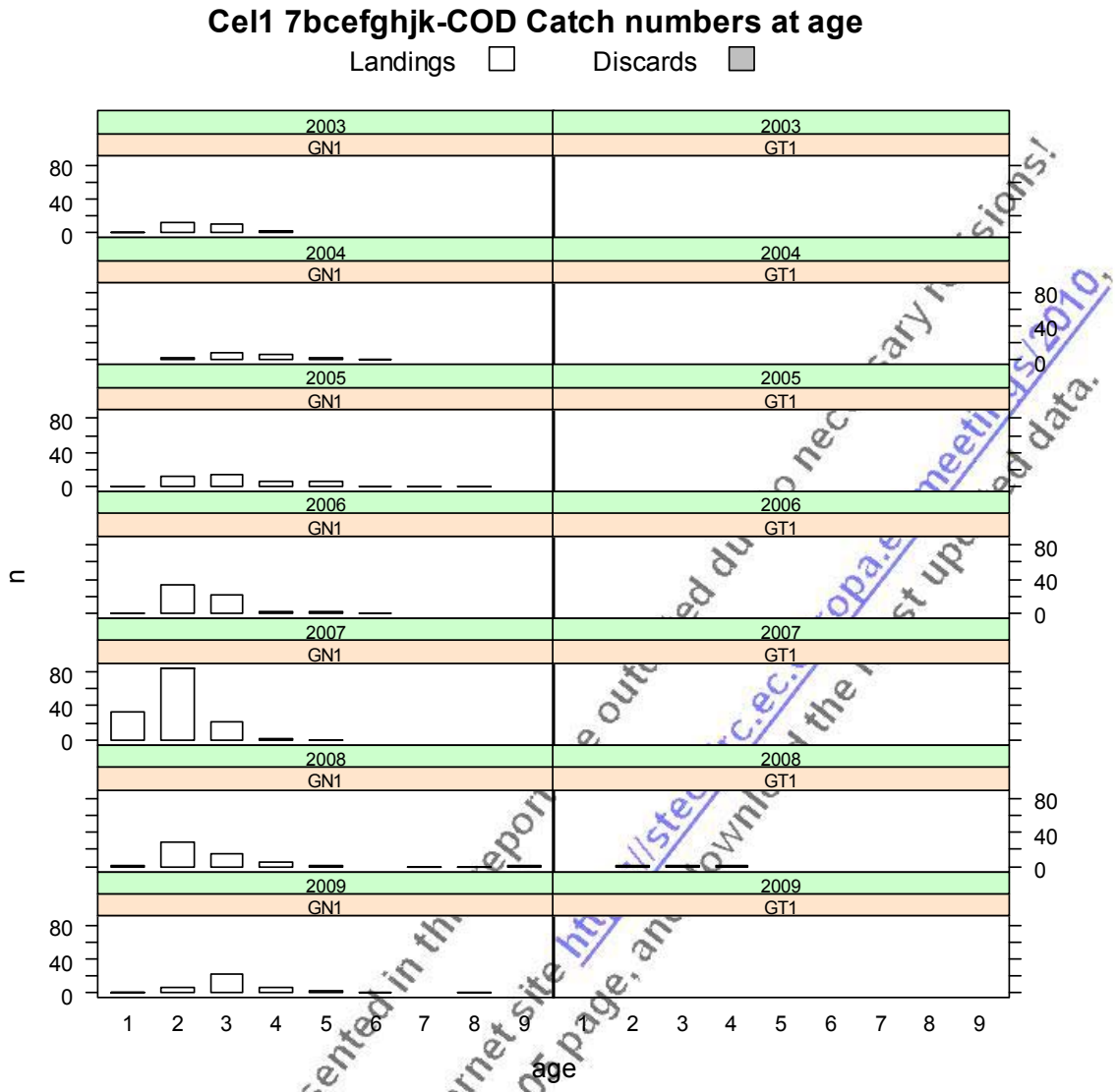


Figure 9.3.2. Continued Landings (t) (in white) and discard (t) (in grey)for cod by age and gear grouping, 2003-2009 in the Celtic Sea (ICES Divisions VIIbc,e-k). Note that discard data are only available for some years and gears, so the lack of discard information for a given year/gear in the graphs means no information rather than zero discards. Furthermore, due to the limited availability and reliability of discard information for some years and from some gears contributing landings information to the dataset, care is required in the use of these data to draw firm conclusions about catch composition.

VIIfg subset of Celtic sea

Because anglerfish and hake are mainly taken with nets and lines on the shelf of the Celtic Sea, it is not surprising to see that their contributions to the landings of the VIIfg area are much lower than for the whole Celtic Sea. Whiting, haddock, Nephrops, anglerfish and cod are the major contributors to the landings in that area.

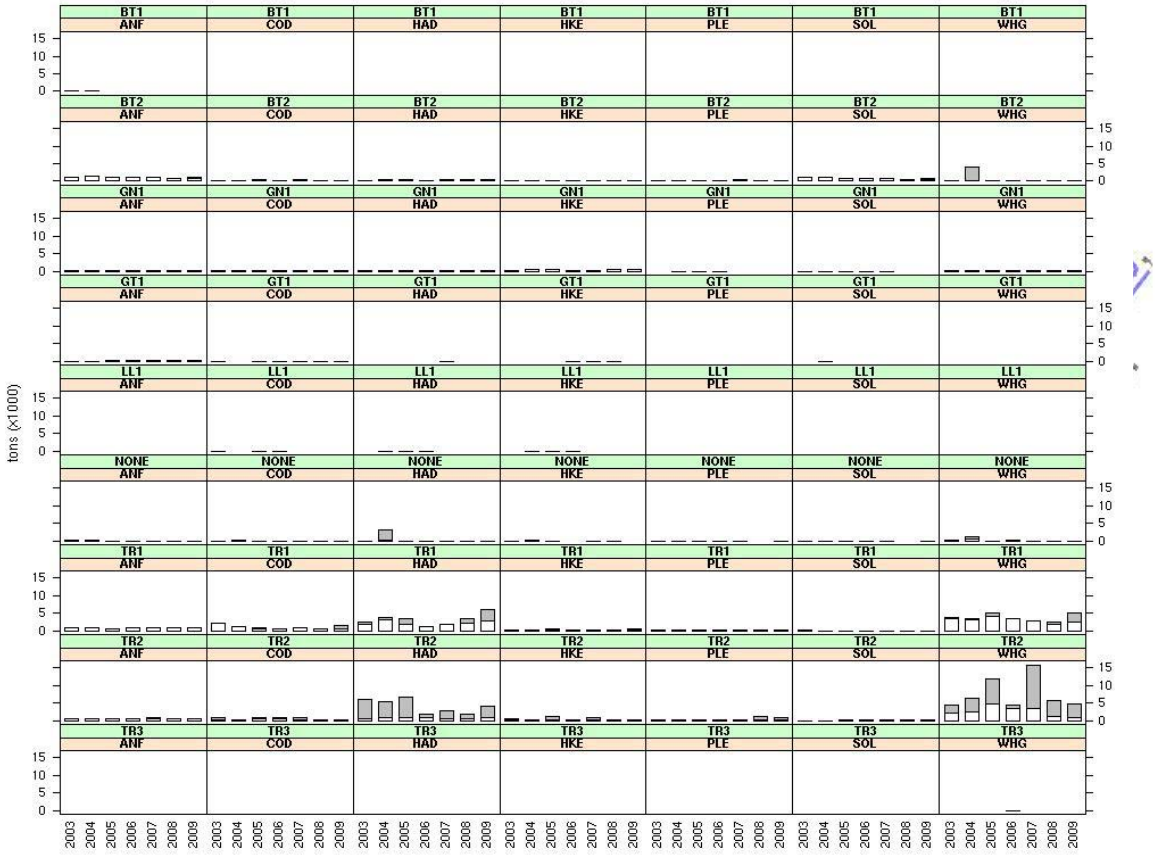


Figure 9.3.4. Landings (t) (in white) and discard (t) (in grey) by gear grouping and species, 2003-2009 (from left to right) in the Celtic Sea (ICES Divisions VIIfg). Note that discard data are only available for some species and gears, so the lack of discard information for a given species/gear in the graphs means no information rather than zero discards. Furthermore, due to the limited availability and reliability of discard information for some years and from some gears contributing landings information to the dataset, care is required in the use of these data to draw firm conclusions about catch composition.

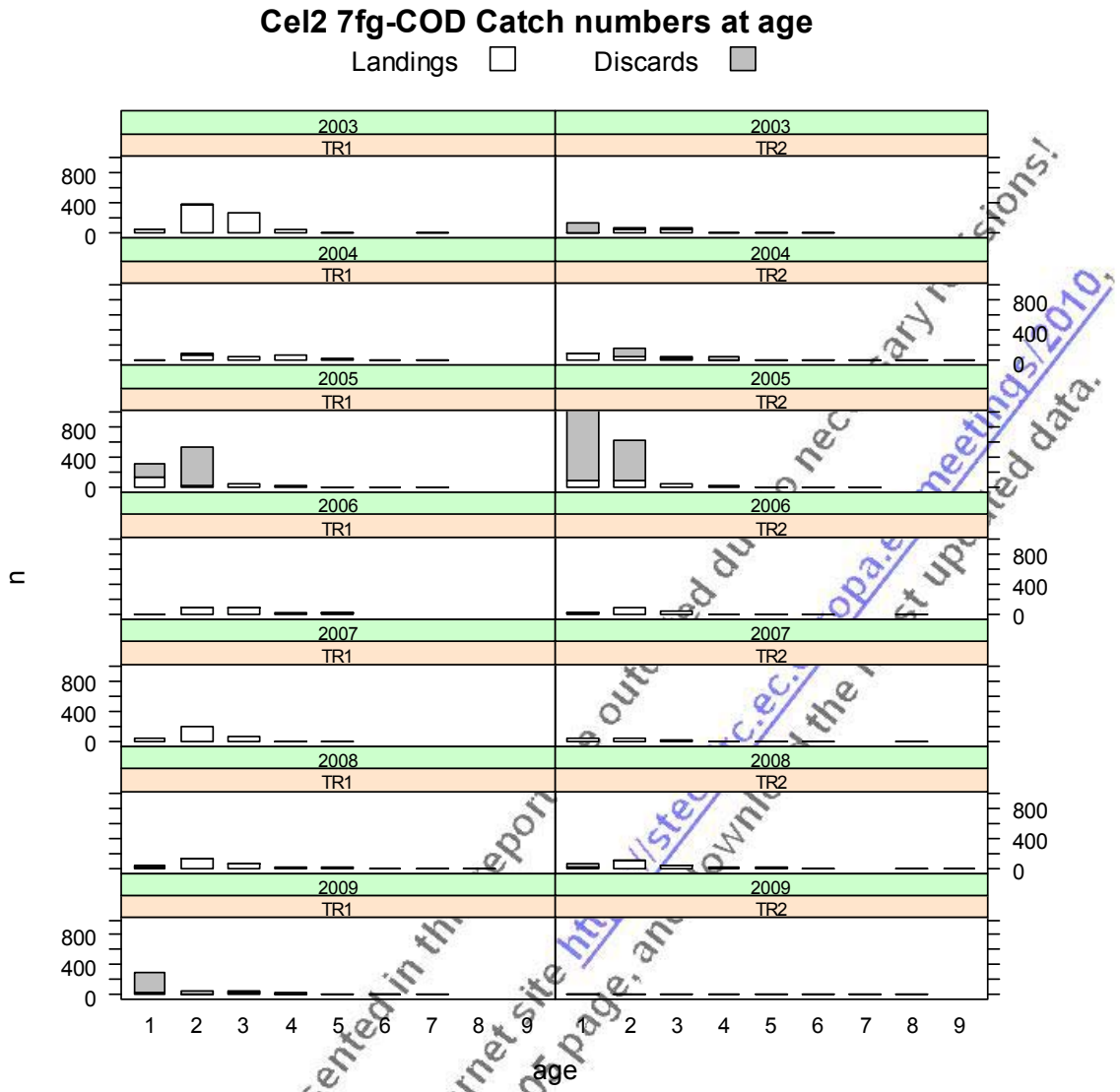


Figure 9.3.5. Landings (t) (in white) and discard (t) (in grey) for cod by age and gear grouping, 2003-2009 in the Celtic Sea (ICES Divisions VIIfg). Note that discard data are only available for some species and gears, so the lack of discard information for a given species/gear in the graphs means no information rather than zero discards. Furthermore, due to the limited availability and reliability of discard information for some years and from some gears contributing landings information to the dataset, care is required in the use of these data to draw firm conclusions about catch composition.

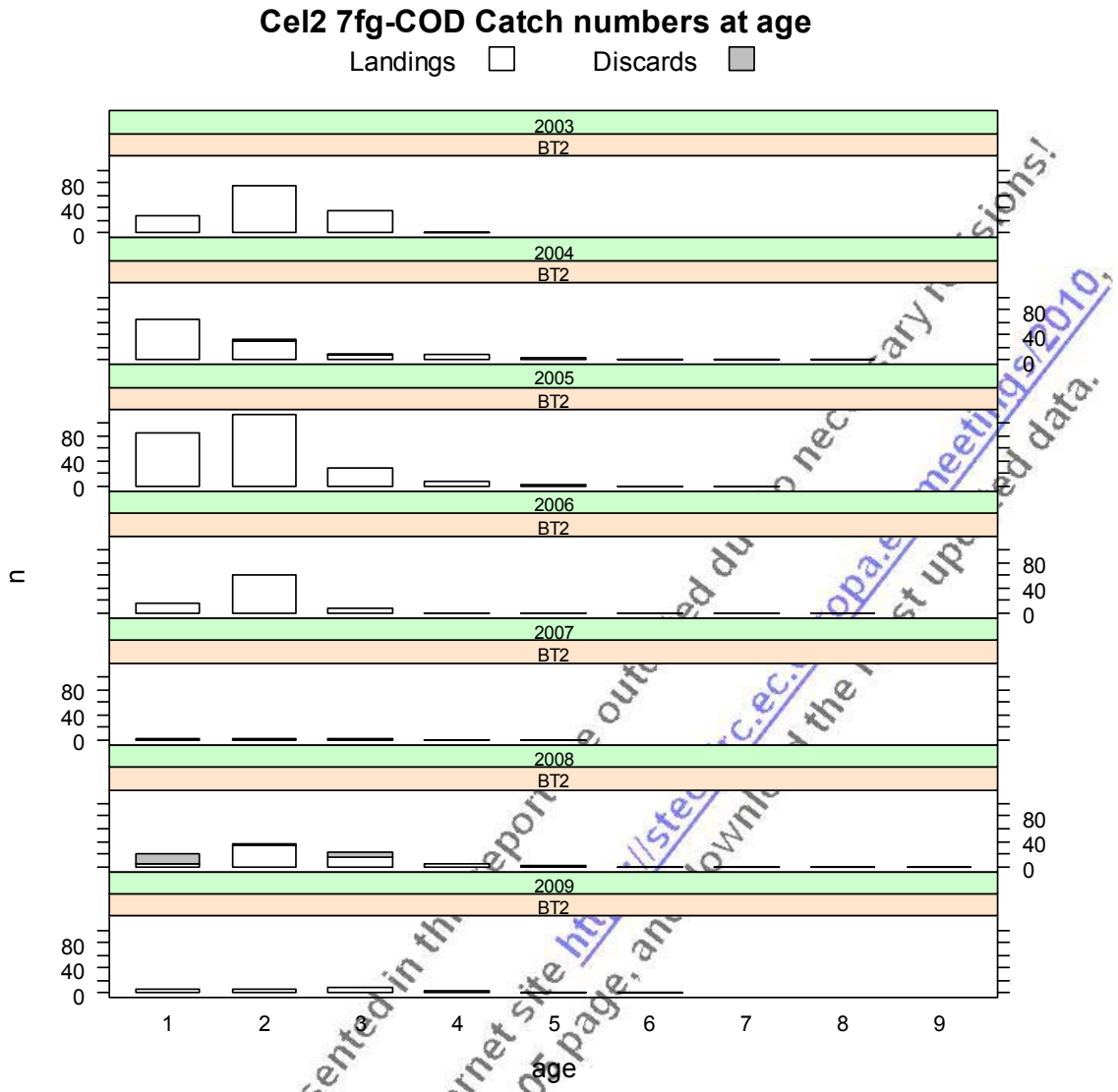


Figure 9.3.5. Continued Landings (t) (in white) and discard (t) (in grey) for cod by age and gear grouping, 2003-2009 in the Celtic Sea (ICES Divisions VIIfg). Note that discard data are only available for some species and gears, so the lack of discard information for a given species/gear in the graphs means no information rather than zero discards. Furthermore, due to the limited availability and reliability of discard information for some years and from some gears contributing landings information to the dataset, care is required in the use of these data to draw firm conclusions about catch composition.

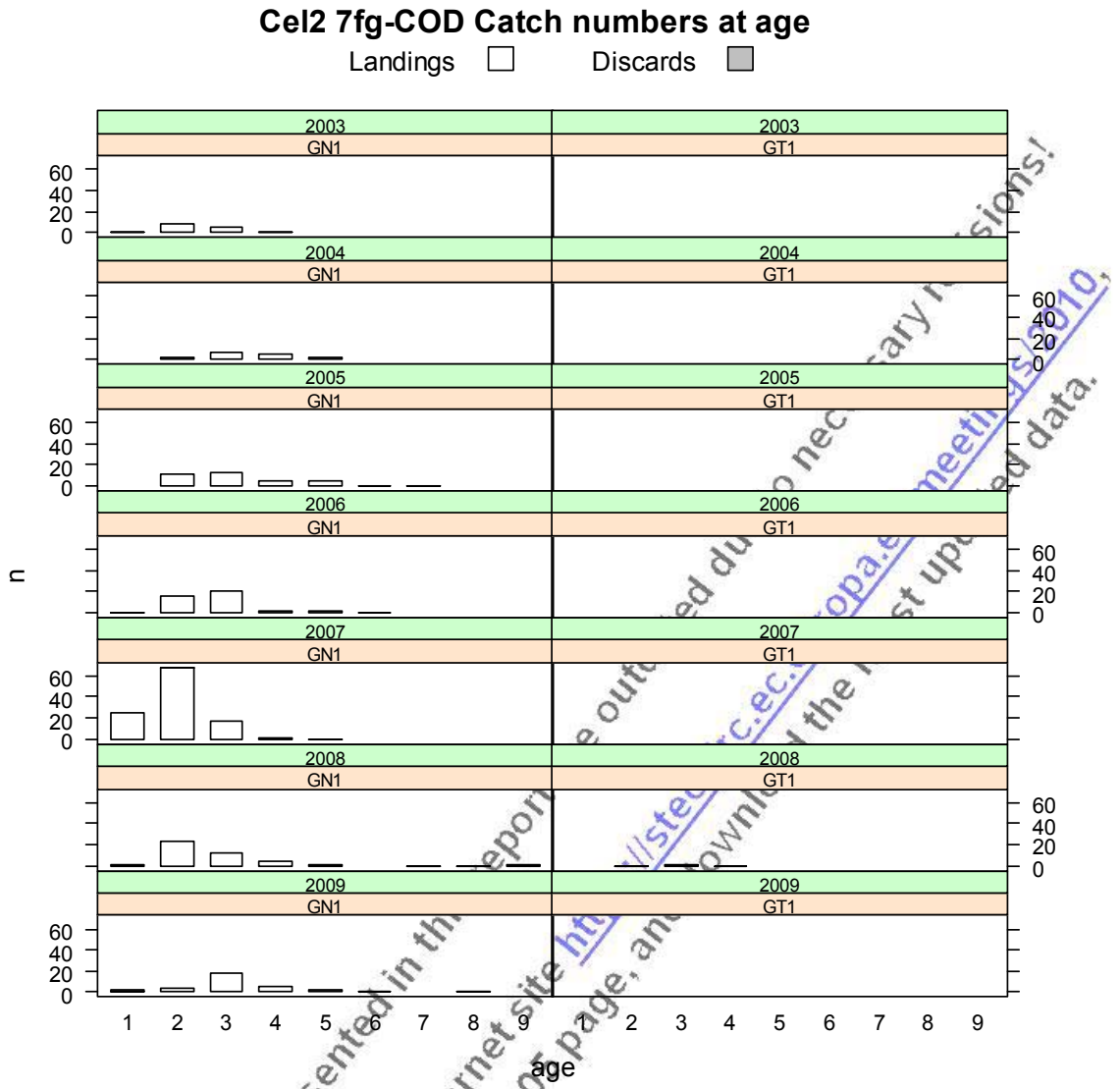


Figure 9.3.5. Continued Landings (t) (in white) and discard (t) (in grey) for cod by age and gear grouping, 2003-2009 in the Celtic Sea (ICES Divisions VIIfg). Note that discard data are only available for some species and gears, so the lack of discard information for a given species/gear in the graphs means no information rather than zero discards. Furthermore, due to the limited availability and reliability of discard information for some years and from some gears contributing landings information to the dataset, care is required in the use of these data to draw firm conclusions about catch composition.

Landings of cod are mostly due to TR1 (Table 9.3.2)(about 48% of the total for the whole Celtic Sea over the period 2003-2009 and 55% for Divisions VIIfg), while the TR2 category represents 31% and 22% of these areas respectively, and BT2 12 and 14% respectively .

Table 9.3.2. Cod landings by gear category and year, 2003-2009. Left: Celtic Sea, Right : Divisions VIIfg

REG_GEAR	2003	2004	2005	2006	2007	2008	2009	Mean Contribution 2003-2009
BT1		1				0		0%
BT2	301	328	449	352	323	222	184	12%
GN1	139	175	202	216	222	178	183	7%
GT1	14	9	12	8	10	13	12	0%
LL1	15	5	4	20	3	3	2	0%
none	31	86	6	4	6	12	6	1%
TR1	2541	1275	808	914	994	900	963	48%
TR2	1056	568	781	853	858	722	668	31%
TR3	0	0	0	0		0	0	0%
Total	4097	2447	2262	2367	2416	2050	2018	100%

REG_GEAR	2003	2004	2005	2006	2007	2008	2009	Mean Contribution 2003-2009
BT1		0						0%
BT2	222	249	347	269	224	154	114	14%
GN1	77	131	164	170	174	143	133	9%
GT1	1	0	1	1	3	2	2	0%
LL1	1		2	2	0		0	0%
none	25	77	4	3	2	6	1	1%
TR1	2078	1023	626	677	753	618	671	55%
TR2	381	288	438	461	361	303	276	22%
TR3			0	0				0%
Total	2785	1768	1582	1583	1517	1226	1197	100%

9.4. Celtic Sea LPUE

Given the incomplete information reported for the discards, the group decided to present the results on the LPUE rather than CPUE. Tables 9.4.1 – 9.4.3 summarize the available information for cod, hake and Nephrops respectively.

Table 9.4.1. Cod LPUE (g/(kW*days)) by gear/mesh-size category and year, 2003-2009. Left: Celtic Sea, Right : Divisions VIIfg

REG GEAR COD	2003	2004	2005	2006	2007	2008	2009
BT1		19	0	0	0	0	0
BT2	23	26	36	33	32	30	27
GN1	24	28	37	59	54	44	46
GT1	16	9	11	5	6	12	11
LL1	17	6	4	14	2	2	3
none	1	3	0	0	0	1	0
TR1	154	81	54	62	69	71	77
TR2	58	30	37	43	43	49	48
TR3	0	0	0	0	0	0	0

REG GEAR COD	2003	2004	2005	2006	2007	2008	2009
BT1		0	0	0	0	0	0
BT2	35	40	59	58	52	55	40
GN1	100	137	212	288	283	235	267
GT1	92	0	42	18	61	42	52
LL1	36		39	61	0	0	0
none	15	36	3	4	2	6	1
TR1	489	247	155	174	191	152	154
TR2	118	90	97	121	94	92	94
TR3	0		0	0	0	0	0

Table 9.4.2. Hake LPUE (g/(kW*days)) by gear/mesh-size category and year, 2003-2002009. Left: Celtic Sea, Right : Divisions VIIfg

REG GEAR COD	2003	2004	2005	2006	2007	2008	2009
BT1	0	0	0	0	0	0	0
BT2	9	7	6	7	7	6	8
GN1	350	338	355	430	340	281	428
GT1	6	3	4	5	3	4	2
LL1	52	36	81	367	648	917	715
none	1	3	1	0	1	0	1
TR1	91	99	120	110	113	100	99
TR2	31	29	28	24	21	26	24
TR3	0	0	0	0	0	0	0

REG GEAR COD	2003	2004	2005	2006	2007	2008	2009
BT1	0	0	0	0	0	0	0
BT2	12	9	9	13	14	11	10
GN1	404	364	522	324	429	670	954
GT1	0	0	0	55	41	42	0
LL1	0	151	58	31	0	0	0
none	8	21	1	0	1	0	0
TR1	42	42	39	50	60	62	63
TR2	43	43	29	33	30	33	28
TR3	0		0	0	0	0	0

Table 9.4.3. Nephrops LPUE (g/(kW*days)) by gear/mesh-size category and year, 2003-2002009. Left: Celtic Sea, Right : Divisions VIIfg

REG GEAR COD	2003	2004	2005	2006	2007	2008	2009
BT1	0		0	0	0	0	0
BT2	6	8	8	9	9	5	5
GN1	0	3	3	1	0	1	1
GT1	1		0	0	0	0	0
LL1	1				0	0	0
none	4	16	5	2	2	4	1
TR1	77	81	114	94	100	137	151
TR2	185	142	193	174	264	338	255
TR3	437			61	0	0	0

REG GEAR COD	2003	2004	2005	2006	2007	2008	2009
BT1	0		0	0	0	0	0
BT2	11	13	15	18	20	12	12
GN1	0	13	12	7	0	1	4
GT1	92				0	0	0
LL1							
none	34	158	12	34	23	68	13
TR1	196	167	211	192	225	337	350
TR2	643	536	560	490	821	979	800
TR3	0			0	0	0	0

LPUE 7 bcefghjk	LPUE 7 fg

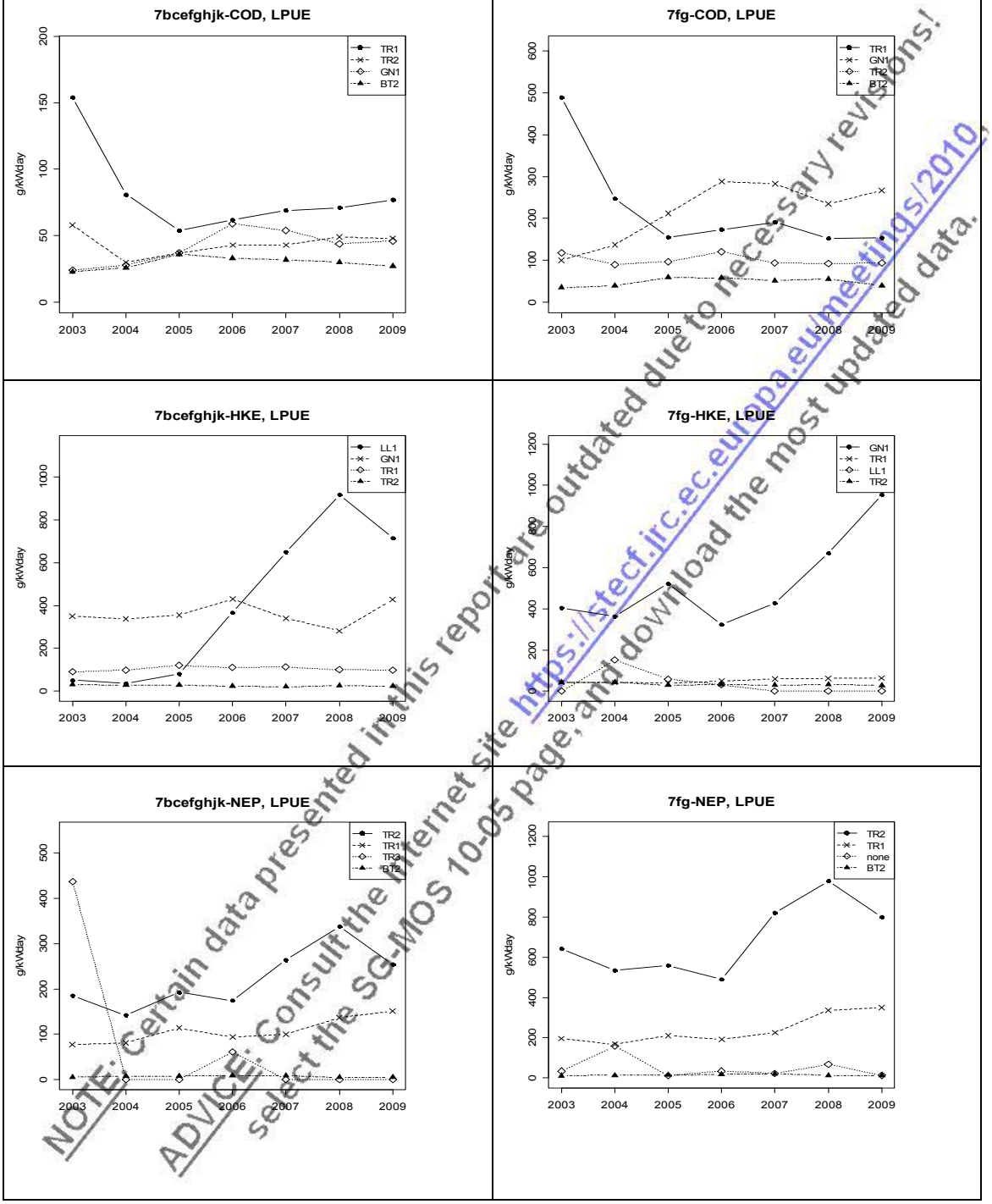


Figure 9.4.1. LPUE for cod, hake and Nephrops (from top to bottom) and for Celtic Sea and VIIfg (from left to right) and for gear category and years 2003-2009.

Figure 9.4.1 shows that after a decrease in the earlier period (2003-2005) of around 60%, the LPUE of cod for the category contributing most to the landings (TR1), experiences an increase in recent years for the whole Celtic Sea, for area VIIfg, the LPUE seems to fluctuate around the value observed in 2005.

Comparison of the two regions Cel1and Cel2

Table 9.4.1 and Figure 9.4.2 suggest that LPUE of cod are much higher in VIIfg than in the Celtic Sea as a whole for most/all the gear and mesh size-category. This is particularly the case for the two main categories, TR1 and TR2 for which the cod CPUE are 2 times higher.

9.5. Celtic sea Ranked gear categories

Tables 9.5.1 and 9.5.2 provide an indication of the ranking (highest first) of cod landings in different gear categories for Celtic Sea overall and VIIfg part of Celtic Sea.

Table 9.5.1. Celtic Sea - Ranked derogations according to relative cod landings in weight (t) 2003-2007. Ranking is according to 2009.

SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
COD	TR1	55%	50%	35%	29%	31%	44%	57%
COD	TR2	34%	26%	46%	53%	48%	35%	29%
COD	BT2	7%	13%	13%	11%	13%	11%	7%
COD	GN1	3%	7%	6%	7%	7%	8%	6%
COD	TR3	0%	0%	0%	0%		0%	0%
COD	LL1	0%	0%	0%	1%	0%	0%	0%
COD	GT1	0%	0%	0%	0%	0%	1%	0%
COD	none	1%	4%	0%	0%	0%	1%	0%
COD	BT1		0%				0%	

Table 9.5.2. Divisions VIIfg - Ranked derogations according to relative cod landings in weight (t) 2003-2007. Ranking is according to 2009.

SPECIES	REG_GEAR	2003	2004	2005	2006	2007	2008	2009
COD	TR1	64%	56%	39%	35%	37%	51%	73%
COD	TR2	26%	19%	39%	43%	38%	25%	15%
COD	BT2	7%	14%	15%	14%	16%	13%	6%
COD	GN1	2%	7%	7%	9%	9%	11%	6%
COD	GT1	0%	0%	0%	0%	0%	0%	0%
COD	LL1	0%		0%	0%	0%		0%
COD	none	1%	4%	0%	0%	0%	0%	0%
COD	TR3			0%	0%			
COD	BT1		0%					

In both areas, category TR1 contributes 60-70% to the total landings of cod.

9.6. Celtic Sea Unregulated/Unallocated gear

Table 9.2.1. gives the trends of the effort reported in this category. Given the category definition, it refers to non-regulated gear (pots etc.) only.

9.7. Celtic Sea Under 10m

Information for French, English and Irish under 10m fleets were available. Irish information was not available by gear type, therefore in the following tables, data for Irish fleets are aggregated in the 'none' category. Tables 9.7.1 to 9.7.6 present landings for plaice, sole and cod by all gear types used by these

vessels in the Celtic Sea and in Divisions VIIfg. Information for other countries is given by gear type, however this information is known to be incomplete.

Table 9.7.1. Plaice landings from vessels under 10m and gar grouping in ICES Divisions VIIb-k. Partial information.

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENG	BT1				0.241	0.486	4.565	15.374	4.4	2.07	0.322
	BT2				0.241	0.486	4.565	15.374	4.4	2.07	0.322
	GN1				3.75	7.14	3.423	13.99	13.262	10.302	10.492
	GT1						0.331	1.618	0.225	0.041	0.007
	LL1				0.311	0.056	0.005	0.209	0.158	0.305	0.183
	none				87.186	65.391	46.492	123.651	87.796	79.906	64.924
	TR1				83.21	64.515	40.619	106.279	81.589	76.006	61.389
	TR2				83.21	64.515	40.619	106.279	81.589	76.006	61.389
	TR3				83.21	64.515	40.619	106.279	81.589	76.006	61.389
	TOTAL				341.359	267.104	181.238	489.053	355.008	322.712	260.417
FRA	BT1					2.063					
	BT2					2.063					
	GN1	2.149	1.305	2.229	4.434	5.084	3.905	3.885	2.899	0.342	0.342
	GT1	4.425	5.02	7.259	7.084	8.484	10.208	15.935	16.284	2.219	2.219
	LL1	0.007	0.03	0.103	0.056	0.244	0.084	0.067	0.082	0.007	0.007
	none	4.294	3.171	6.078	12.373	7.678	14.733	6.216	5.463	0.593	0.539
	TR1	2.958	3.11	5.848	11.91	5.554	14.688	6.121	5.445	0.577	0.523
	TR2	2.958	3.11	5.848	11.91	5.554	14.688	6.121	5.445	0.577	0.523
	TR3	2.958	3.11	5.848	11.91	5.554	14.688	6.121	5.445	0.577	0.523
	TOTAL	19.749	18.856	33.213	59.677	42.278	72.994	44.466	41.063	4.892	4.676
GBG	GN1										0.363
	none									0.077	
	TR1									0.077	
	TR2									0.077	
	TR3									0.077	
	TOTAL									0.308	0.363
GBJ	none					0.017					
	TR1					0.017					
	TR2					0.017					
	TR3					0.017					
						0.068					
IRL	none				4.42	1.44	0.53	0.84	0.96	2.25	0.95
NIR	none							1.027		1.289	0.696
	TR1							1.027		1.289	0.696
	TR2							1.027		1.289	0.696
	TR3							1.027		1.289	0.696
	TOTAL							4.108		5.156	2.784
SCO	none										0.01725714
TOTAL		19.749	18.856	33.213	405.456	310.89	254.762	538.467	397.031	335.318	269.207257

Table 9.7.2. Plaice landings from vessels under 10m and gar grouping in ICES Divisions VIIf-g. Partial information.

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENG	BT1					0.3		0.2	0.0	0.7	
	BT2					0.3		0.2	0.0	0.7	
	GN1				0.3	0.5	0.1	3.0	3.5	2.1	2.7
	GT1						0.1		0.0		
	LL1				0.2	0.1		0.1	0.0	0.0	0.0
	none				18.4	11.9	12.7	31.5	17.4	17.1	8.0
	TR1				18.4	11.5	12.7	31.3	17.4	16.3	7.9
	TR2				18.4	11.5	12.7	31.3	17.4	16.3	7.9
	TR3				18.4	11.5	12.7	31.3	17.4	16.3	7.9
	TOTAL				74.1	47.7	50.9	129.1	73.0	69.6	34.5
GBG	GN1										0.0
	TOTAL										0.0
IRL	none							0.1		1.6	0.0
NIR	none							1.0		1.3	0.7
	TR1							1.0		1.3	0.7
	TR2							1.0		1.3	0.7
	TR3							1.0		1.3	0.7
	TOTAL							4.1		5.2	2.8
SCO	none										0.0
TOTAL					74.1	47.7	50.9	133.3	73.0	76.3	37.3

Table 9.7.3. Sole landings from vessels under 10m and gar grouping in ICES Divisions VIIb-k. Partial information.

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENG	BT1				0.161	0.874	7.001	8.581	6.263	7.131	2.618
	BT2				0.161	0.874	7.001	8.581	6.263	7.131	2.618
	GN1				6.605	6.806	7.776	21.718	17.004	23.744	19.365
	GT1					0	0.511	0.069	0.102	0.348	0.255
	LL1				0.197	0.027	0.008	0.06	0.054	0.598	0.437
	none				26.559	18.282	25.507	59.033	49.245	34.427	22.636
	TR1				25.512	16.644	18.121	49.593	41.535	25.918	17.689
	TR2				25.512	16.644	18.121	49.593	41.535	25.918	17.689
	TR3				25.512	16.644	18.121	49.593	41.535	25.918	17.689
	TOTAL				110.219	76.795	102.167	246.821	203.536	151.133	100.996
FRA	BT1					2.966					
	BT2					2.966					
	GN1	7.732	7.551	9.583	10.511	8.688	10.2	6.109	4.31	0.799	0.799
	GT1	9.669	3.807	23.242	22.63	18.087	25.441	22.684	32.648	10.533	10.533
	LL1		0.008	0.304	0.231	0.073	0.057	0.347	0.244	0.017	0.017
	none	1.984	1.441	4.703	18.436	17.28	13.112	7.225	4.794	1.001	0.866
	TR1	1.858	1.346	4.451	17.023	10.506	12.818	6.931	4.451	0.917	0.782
	TR2	1.858	1.346	4.451	17.023	10.506	12.818	6.931	4.451	0.917	0.782
	TR3	1.858	1.346	4.451	17.023	10.506	12.818	6.931	4.451	0.917	0.782
	TOTAL	24.959	16.845	51.185	102.877	81.578	87.264	57.158	55.349	15.101	14.561
GBG	GN1										0.287
	none									0.762	
	TR1									0.762	
	TR2									0.762	
	TR3									0.762	
	TOTAL									3.048	0.287
GBJ	none					0.013					
	TR1					0.013					
	TR2					0.013					
	TR3					0.013					
	TOTAL					0.052					
IRL	none				4.55	1.31	0.11	0.41	0.46	0.21	1.23
NIR	none							0.441		0.101	0.053
	TR1							0.441		0.101	0.053
	TR2							0.441		0.101	0.053
	TR3							0.441		0.101	0.053
	TOTAL							1.764		0.404	0.212
SCO	none										0.0102
TOTAL		**24.959**	**16.845**	**51.185**	**217.646**	**159.735**	**189.541**	**306.153**	**259.345**	**169.896**	**117.2962**

Table 9.7.4. Sole landings from vessels under 10m and gar grouping in ICES Divisions VIIf-g. Partial information.

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENG	BT1					0.708		1.062	1.59	5.121	1.69
	BT2					0.708		1.062	1.59	5.121	1.69
	GN1				0.27	1.371	0.082	3.067	3.511	1.263	1.314
	GT1						0.024				
	LL1				0.126	0.017		0.018	0.005	0.011	0.016
	none				14.438	9.272	7.98	28.522	19.37	19.196	9.149
	TR1				14.435	8.433	7.98	27.271	17.684	14.029	7.092
	TR2				14.435	8.433	7.98	27.271	17.684	14.029	7.092
	TR3				14.435	8.433	7.98	27.271	17.684	14.029	7.092
	TOTAL				58.139	37.375	32.026	115.544	79.118	72.799	35.135
GBG	GN1										0.001
IRL	none				4						0.1
NIR	none							0.441		0.101	0.053
	TR1							0.441		0.101	0.053
	TR2							0.441		0.101	0.053
	TR3							0.441		0.101	0.053
	TOTAL							1.764		0.404	0.212
SCO	none										0.00295
TOTAL					**62.139**	**37.375**	**32.026**	**117.308**	**79.118**	**73.203**	**35.45095**

Table 9.7.5. Cod landings from vessels under 10m and gar grouping in ICES Divisions VIIb-k. Partial information.

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENG	BT1					0.021	0.034	0.176	0.098	0.113	0.006
	BT2					0.021	0.034	0.176	0.098	0.113	0.006
	GN1				21.263	16.291	10.712	29.621	36.663	19.479	27.631
	GT1				0.003	0.06	0.065		0.022	0.203	0.345
	LL1				0.024	0.077	0.133	0.807	0.727	1.936	6.396
	none				19.227	10.678	21.332	26.479	29.025	16.675	13.849
	TR1				13.707	10.65	21.291	26.268	28.886	16.403	13.278
	TR2				13.707	10.65	21.291	26.268	28.886	16.403	13.278
	TR3				13.707	10.65	21.291	26.268	28.886	16.403	13.278
	TOTAL				81.638	59.098	96.183	136.063	153.291	87.728	88.067
FRA	BT1					0.125					
	BT2					0.125					
	GN1	0.535	1.297	0.907	1.055	1.688	0.383	0.785	0.449	0.442	0.442
	GT1	0.603	1.026	1.506	2.45	0.087	0.918	0.547	2.303	0.924	0.924
	LL1	0.06	0.204	0.262	0.145	0.066	0.04	0.046	0.025	0.022	0.022
	none	0.305	0.636	0.613	0.383	0.444	0.364	0.071	0.068	0.015	
	TR1	0.305	0.576	0.58	0.357	0.319	0.364	0.071	0.068	0.015	
	TR2	0.305	0.576	0.58	0.357	0.319	0.364	0.071	0.068	0.015	
	TR3	0.305	0.576	0.58	0.357	0.319	0.364	0.071	0.068	0.015	
	TOTAL	2.418	4.891	5.028	5.104	3.492	2.797	1.662	3.049	1.448	1.388
GBG	GN1										0.193
	none									0.174	
	TR1									0.174	
	TR2									0.174	
	TR3									0.174	
	TOTAL									0.696	0.193
IRL	none				195.73	17.38	19.19	10.98		1.2	11.11
NIR	none							0.105		0.415	0.203
	TR1							0.105		0.415	0.203
	TR2							0.105		0.415	0.203
	TR3							0.105		0.415	0.203
	TOTAL							0.42		1.66	0.812
SCO	none										0.06478524
TOTAL		**2.418**	**4.891**	**5.028**	**282.472**	**79.97**	**118.17**	**149.125**	**156.34**	**92.732**	**101.63479**

Table 9.7.6. Cod landings from vessels under 10m and gear grouping in ICES Divisions VIIf-g. Partial information.

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
ENG	BT1					0.015		0.016	0.029	0.086	0.006
	BT2					0.015		0.016	0.029	0.086	0.006
	GN1				0.454	1.007	0.961	5.966	4.883	2.126	2.692
	GT1								0.005		
	LL1				0.001	0.009	0.068	0.496	0.251	0.035	0.047
	none				3.507	1.817	15.552	12.313	8.102	2.391	1.632
	TR1				3.454	1.802	15.552	12.291	8.072	2.305	1.589
	TR2				3.454	1.802	15.552	12.291	8.072	2.305	1.589
	TR3				3.454	1.802	15.552	12.291	8.072	2.305	1.589
					14.324	8.269	63.237	55.68	37.515	11.639	9.15
GBG	GN1										0.012
IRL	none				59.88	17.03	18.6	9.45		0.66	10.69
NIR	none							0.105		0.415	0.203
	TR1							0.105		0.415	0.203
	TR2							0.105		0.415	0.203
	TR3							0.105		0.415	0.203
								0.42		1.66	0.812
SCO	none										0.00401191
TOTAL					**74.204**	**25.299**	**81.837**	**65.55**	**37.515**	**13.959**	**20.6680119**

Since the data are regarded as incomplete, these figures represent minimum estimates of the contribution of under 10m vessels.

9.8. Relative importance of un-regulated and under 10m vessels in overall

The two previous sections suggest that even though the fishing effort for unregulated/undefined gear/mesh-size and under 10 m vessels can sometimes be quite high, the impact of cod appears to be relatively insignificant. This, however, needs to be confirmed when under 10m vessels information is available for all countries involved.

Figure 9.8.1. below shows the fishing effort (in hours fished) by ICES rectangle for 2003-2008 for the main gear grouping.

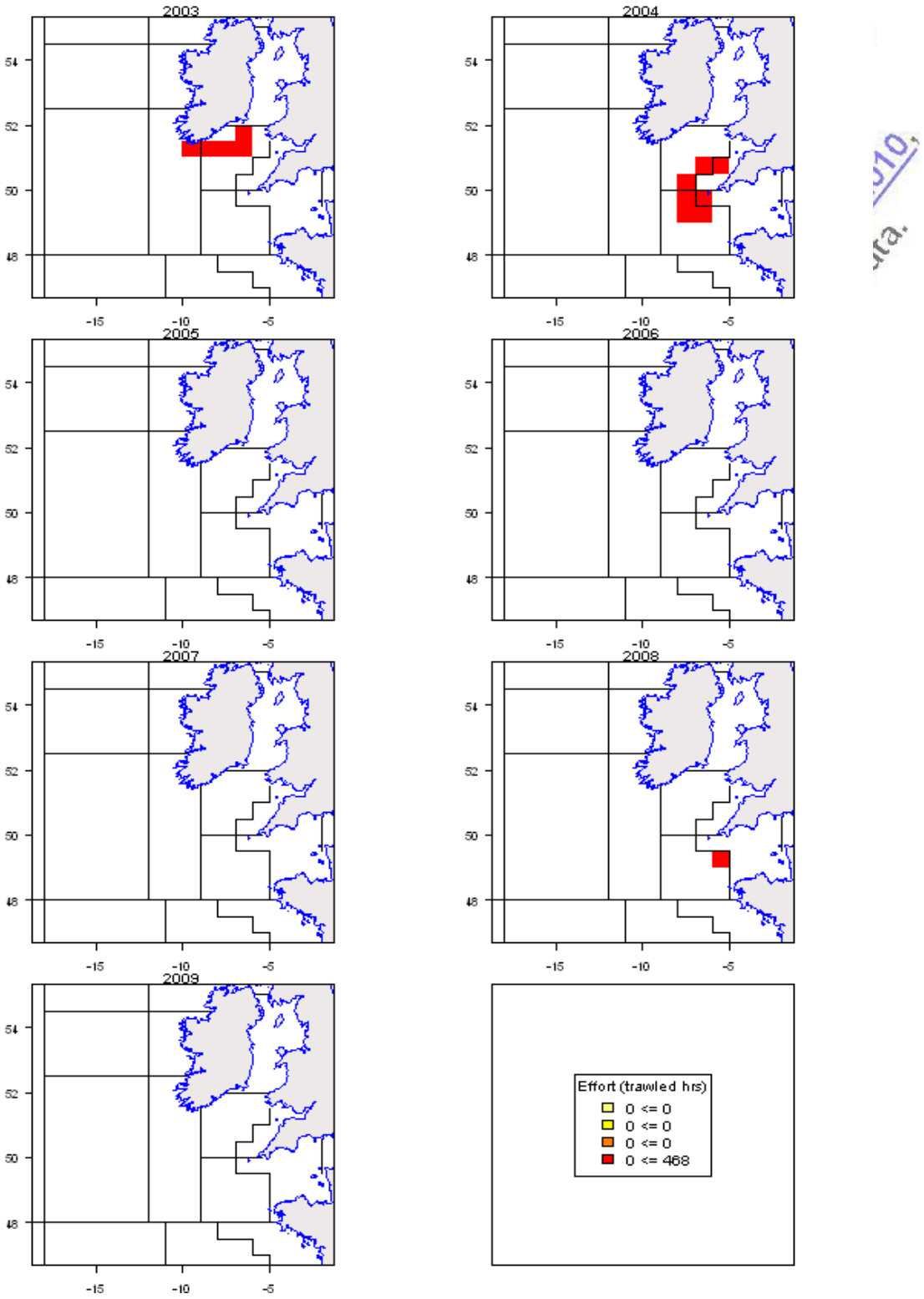


Figure 9.8.1. Fishing effort (in hours fished) by ICES rectangle for 2003-2008 for the main gear grouping BT1.

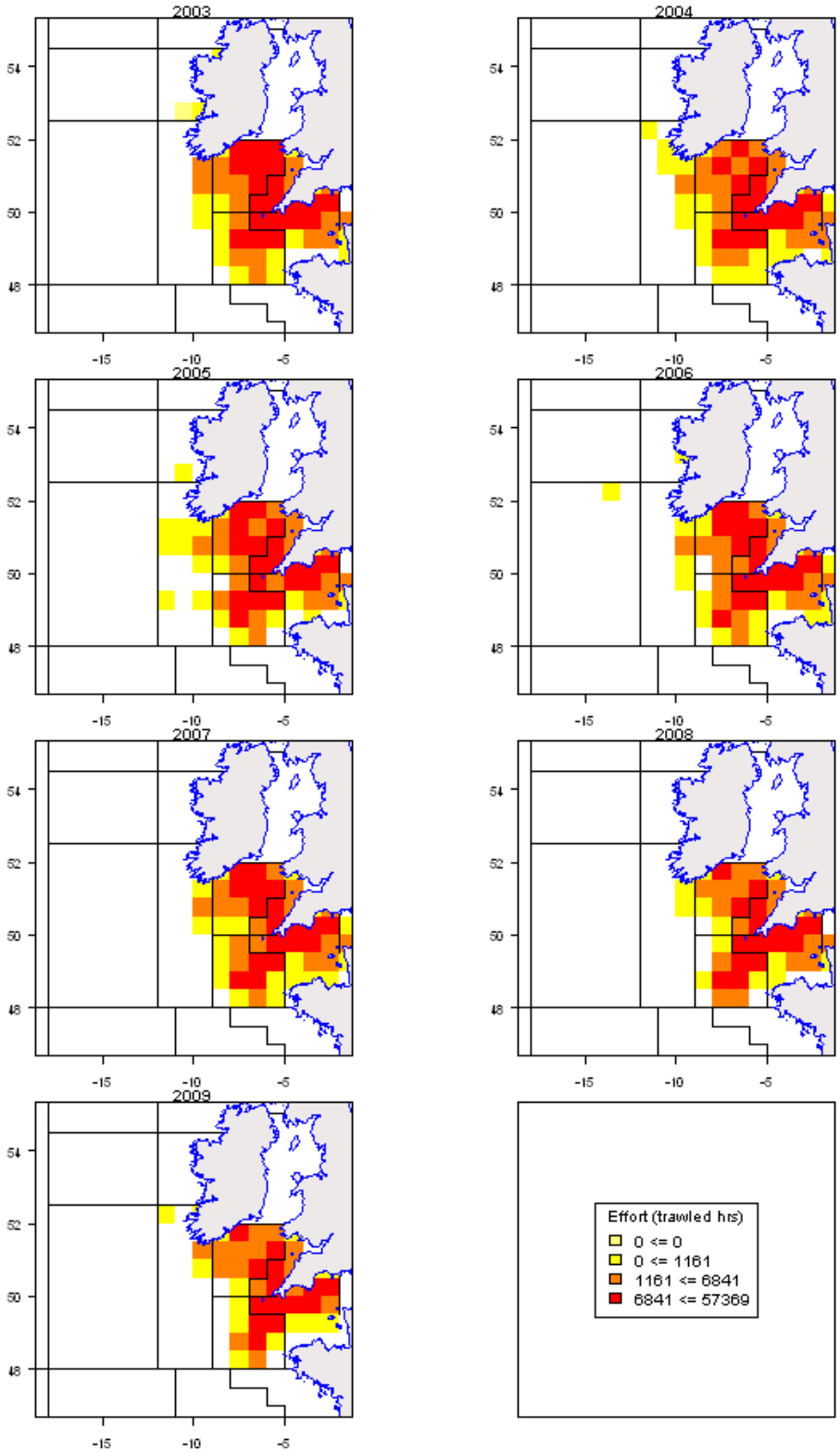


Figure 9.8.1. continued for BT2.

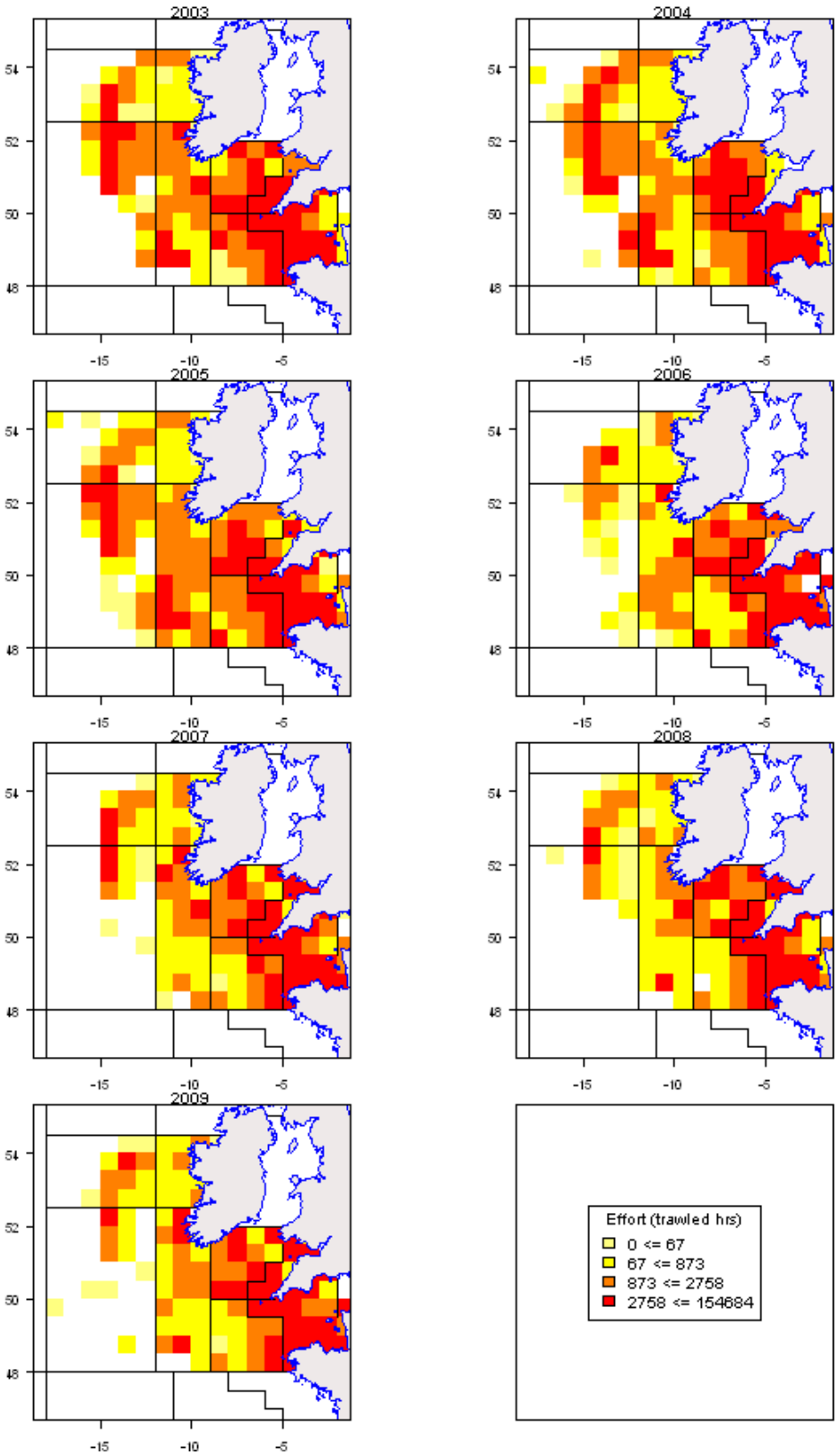


Figure 9.8.1. continued for GN1.

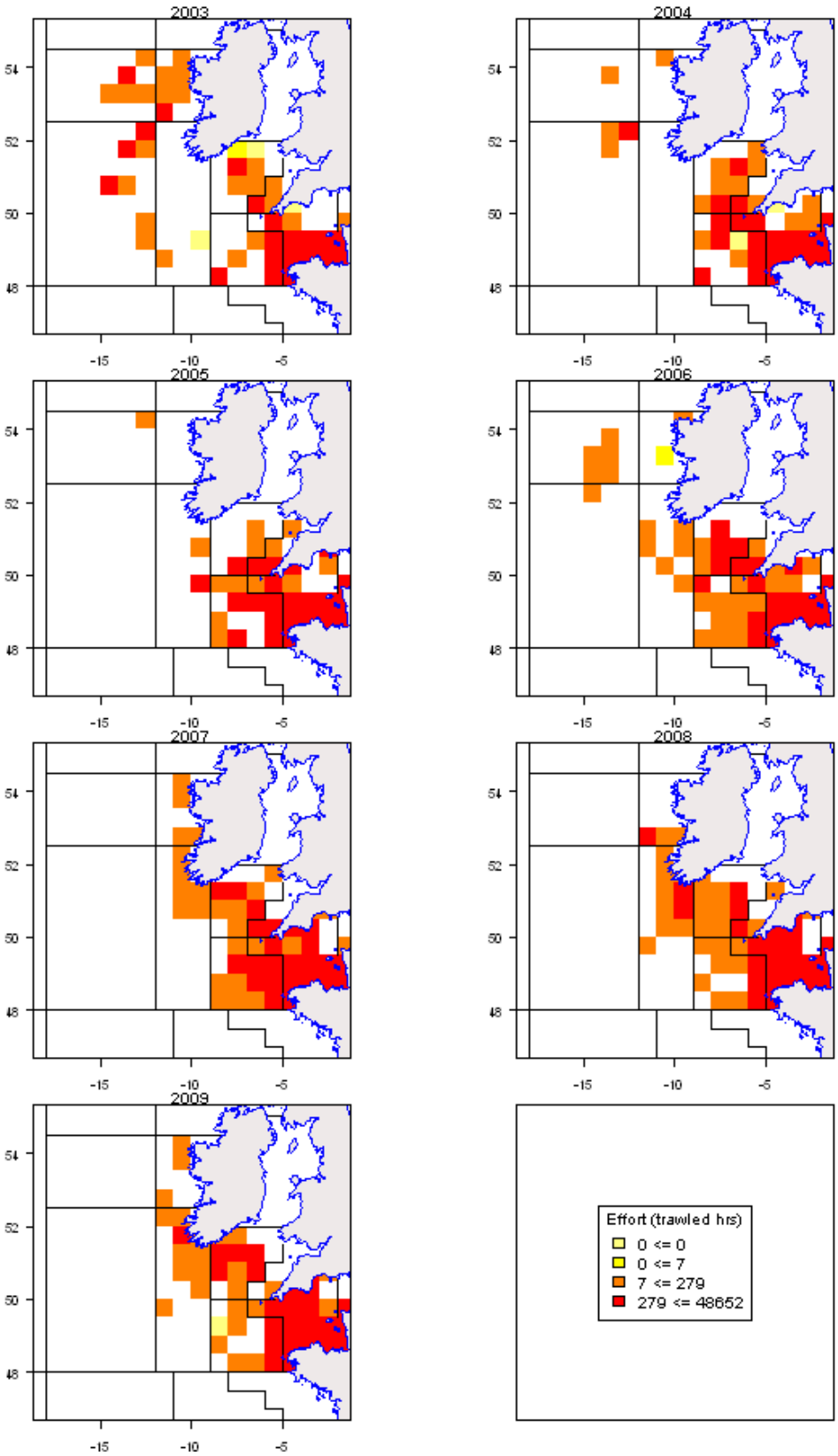


Figure 9.8.1. continued for gear GT1.

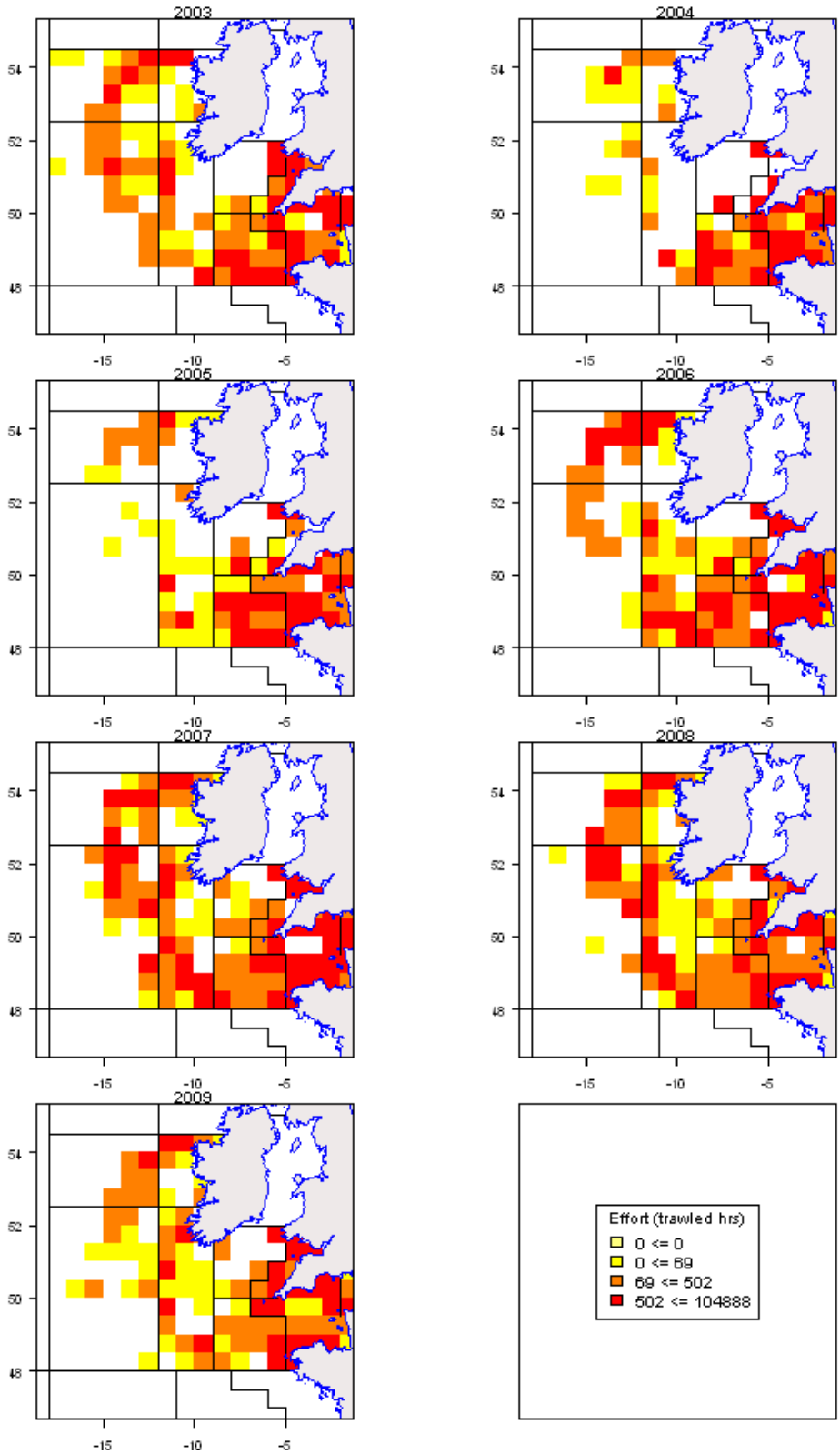


Figure 9.8.1. continued for LL1.

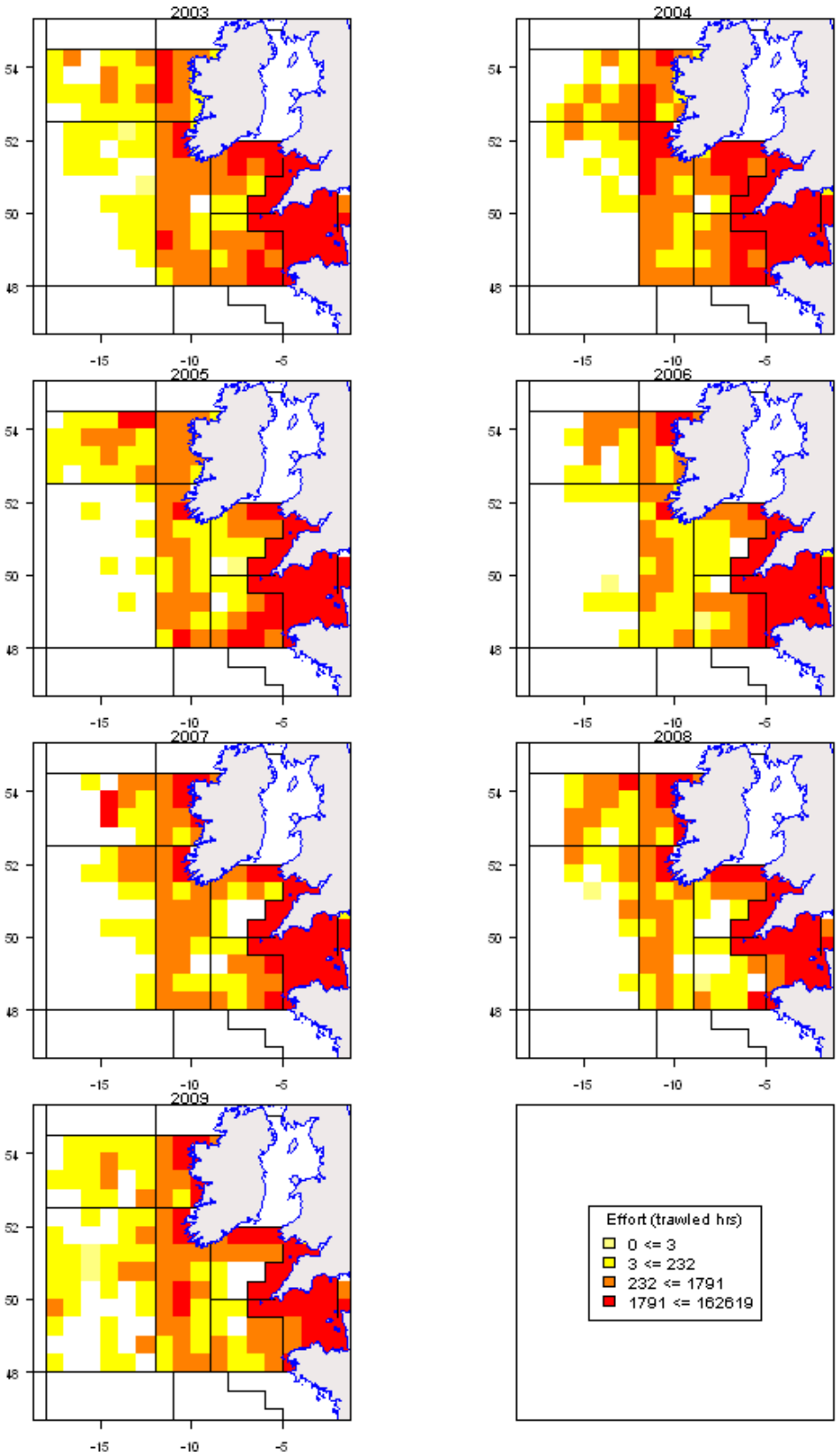


Figure 9.8.1. continued for 'none'.

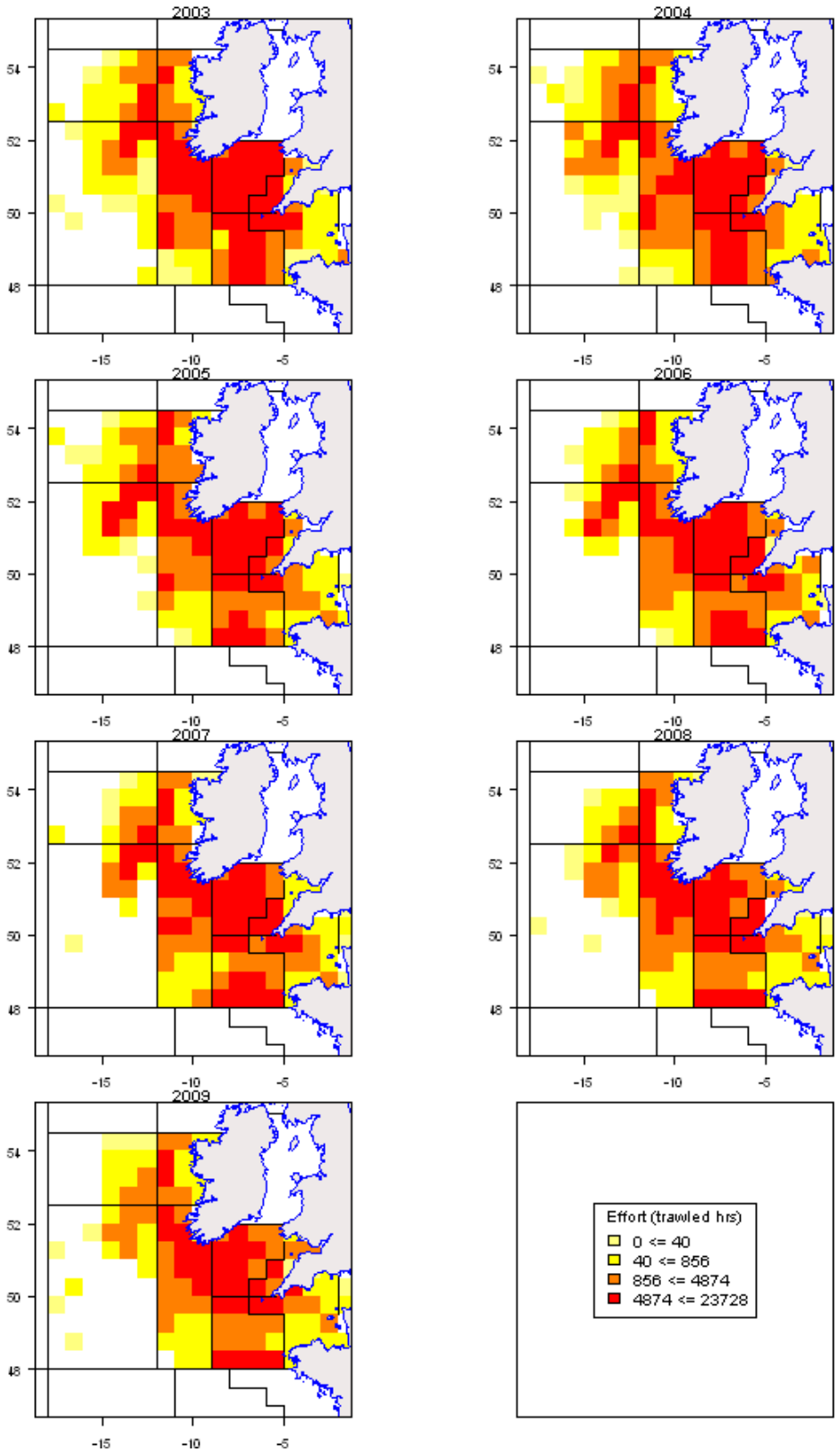


Figure 9.8.1. continued for TR1.

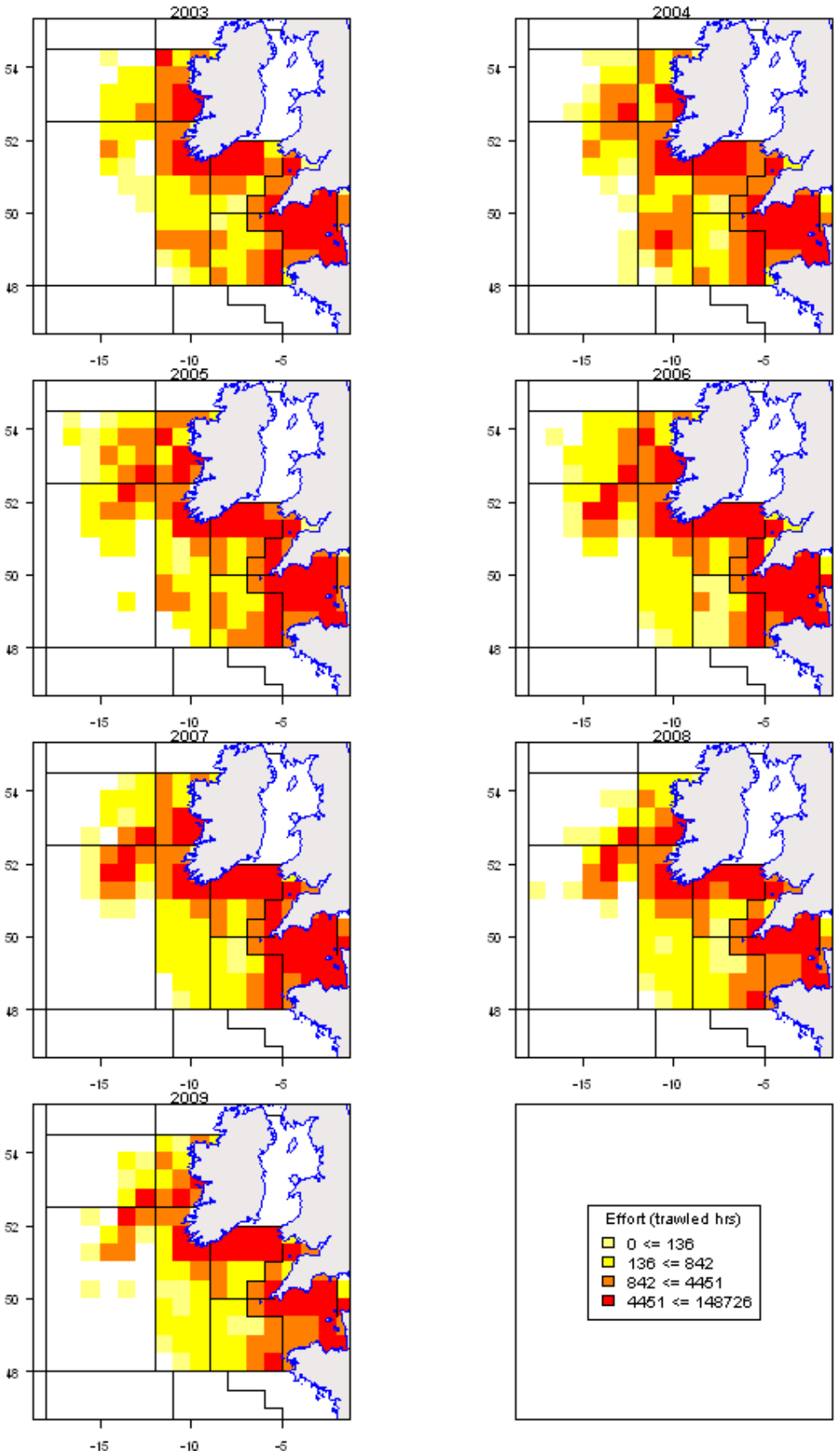


Figure 9.8.1. continued for TR2.

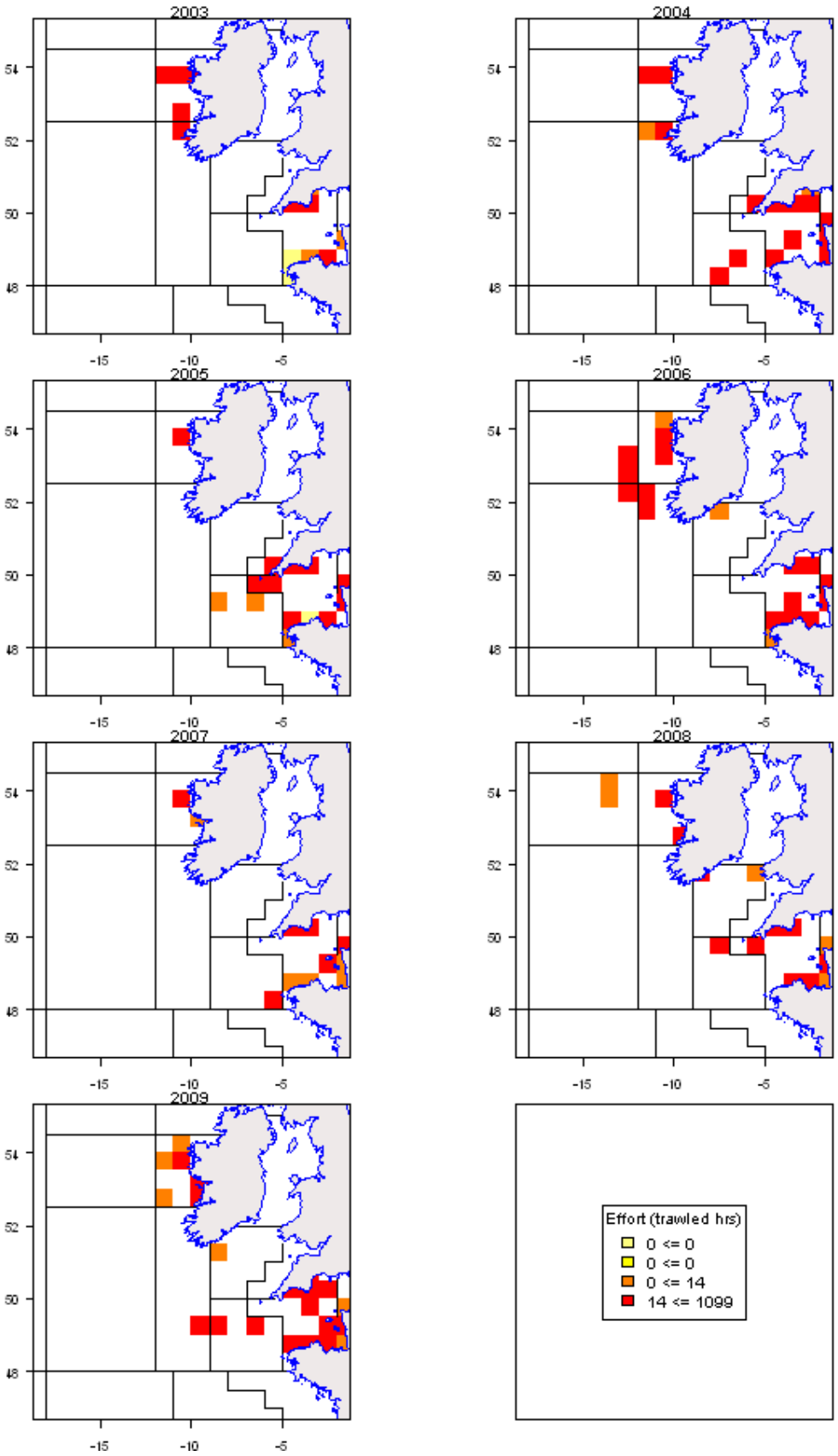


Figure 9.8.1. continued for TR3.

9.9. Conclusion

In order to manage the Celtic Sea Cod stock using a scheme involving limits on effort, the limitations should be concentrated where their impact provides maximum benefit. In the light of this, ICES Divisions VIIbc is not considered since the Celtic Sea Cod stock covers Divisions VIIe-k only.

Given the importance of the Divisions VIIfg in term of cod catches, and the somewhat higher LPUE in that area, a concentration of the regulation in that area may be beneficial. However, the group was not able to consider other relevant data such as the distributions of spawning fish or whether parts of the wider Celtic Sea are important for juveniles. Observations of these factors would help to confirm whether or not management concentrated on a subset of the overall area would provide the necessary protection for the stock as a whole. It is likely that limitation of effort specific to the VIIfg area would benefit to the cod stock, and also to other species, even though there will be some shift of effort to adjacent areas, given the differences in LPUE.

It is important to note that, as for other areas covered by Annex IIa, some mesh size categories group together several fishing activities which in fact target different species. Therefore, the correspondence between the métier and the gear/mesh-size category may be not straightforward since the impact on cod may be very different. For instance, the *Nephrops* métier in the Celtic Sea may be part of mesh-size category TR2 for Irish vessels, while for France this métier is mostly represented within mesh-size category TR1.

This analysis of the French fishery presented in last year's report (STECF, 2008) showed that limiting fishing effort for a vessel targeting the benthic species (anglerfish, megrim) may have practically no effect on the cod stock. However, this metier contributes significantly to the total fishing effort of the otter trawl in the Celtic Sea.

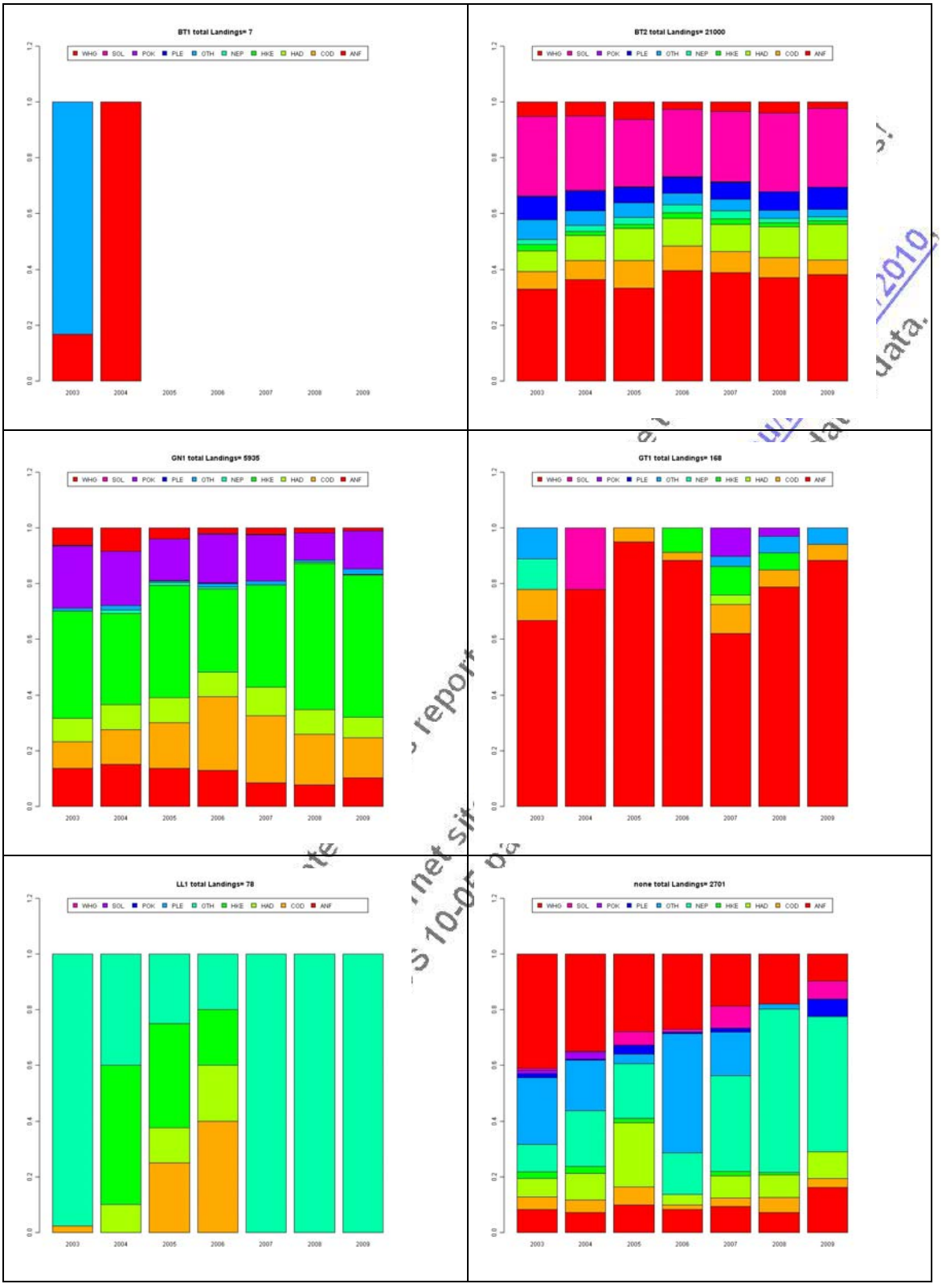
The definition of the 'effort groups' should take account of these métiers. This should help to maximize the impact of the regulated measures, while preventing unnecessary restrictions in métiers not contributing much to mortality of cod.

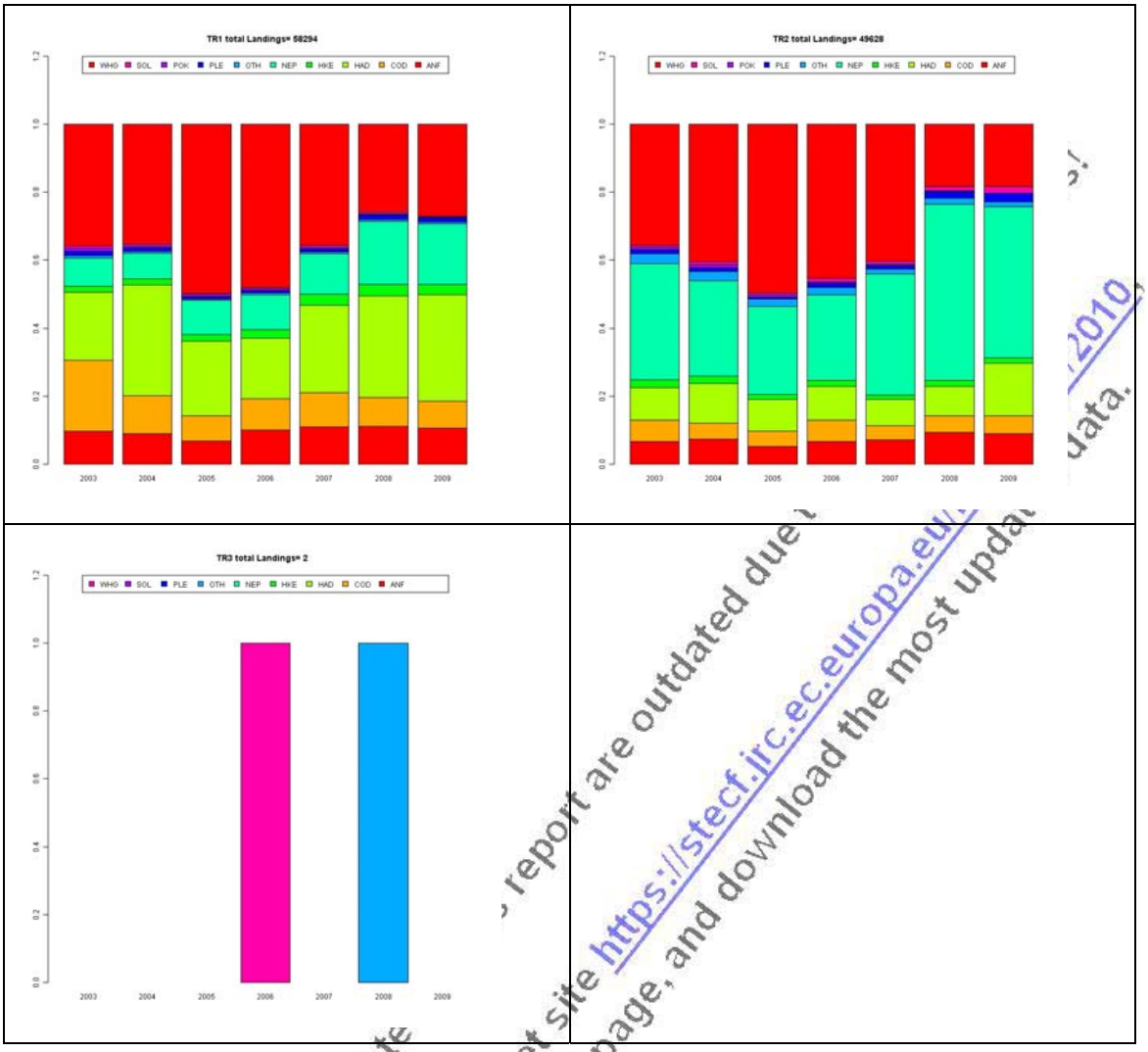
Given that the number of vessels may have increased, a first regulating measure could be to limit the access of the area.

9.10. Specific TORs "Concerning effort, CPUE/LPUE and catch data in the Celtic Sea:

> (i) For VIIf+VIIg only, identify the **main species** (volume and percentage) caught per gear category, and related trends in recent years. Specify when this calculation has taken account of discards as well."

(i) The main species (in volume) were identified in the report (Tables 9.3.1.1a-I). The next figures show the relative percentage (in volume, not taking into account the discards) of each species in the total catches. A group ("OTH") merging all the "other" species not described in the report has been added to take into account the whole landings. The trends for the main gear grouping (TR1 and BT2) are quite stable. The other gear grouping appear to be more erratic but the level of effort of these gear grouping detailed are not significant compared to the main gear groupings.


BT1 total Landings= 7
BT2 total Landings= 21000
GN1 total Landings= 5935
GT1 total Landings= 168
LL1 total Landings= 78
none total Landings= 2701
WHG SOL POK PLE OTH NEP HKE HAD COD ANF
2003 2004 2005 2006 2007 2008 2009



10. REVIEW OF FISHING EFFORT DEPLOYED IN THE CONTEXT OF A MULTIANNUAL PLAN OF SOLE IN THE BAY OF BISCAY (R(EC)NO 388/2006)

10.1. General considerations regarding the derogations and special conditions

STECF-SGMOS notes that assignment of derogations and special conditions is based on best expert knowledge. Data errors may exist regarding the huge data bases and the special knowledge required to deal with them (grouping and exact formulation of data queries).

STECF-SGMOS noted that it was impossible to evaluate any effort or catch data broken down by gear (as laid down in Annex IV of Commission Decision 2008/949/CE) for regulated and non regulated vessels (as laid down in the plan applying to the Bay of Biscay, article 5 of R(EC) No 388/2006) since the data-call did not require the split up according to article 5.

It should also be noted that all the French data series was revised substantially in 2010 (cfr. Table 10.2.2 percent difference) as new calculating methods have been introduced. Details are described in section 5.

As a first attempt to provide information on the fisheries and metiers, currently affected by the multiannual plan in the Bay of Biscay, STECF-SGMOS decided to tabulate the information available for all the gear categories involved and all major species.

10.2. Trend in effort 2000-2009 by derogation and by Member State

Catch and effort data have been provided by all Member States except Spain.

Spanish data provided the previous years are now under revision, effort and catch time series need to be reconsidered before further complete analysis of the activity in this area.

All analyses were made this year without Spanish data.

Apart from the Belgium beam trawl fleet, only operational in quarter 3, almost all effort from all gears are French. The French otter trawl fleet being by far the dominating fleet with percentages around 60% of the effort deployed in the last 8 years (Table 10.2.1 and Figure 10.2.1). The other fleets involved are the French trammel nets with increasing trends from about 4% in 2000 up to 15% in the last two years. The predominantly French Pelagic trawl effort went down from about 40% in the beginning of the series to around 5% in the last few years. The Belgian beam trawl fleet accounts only for about 4% of the effort.

As data problems were discovered with the French effort information for 2002, STECF-SGMOS decided only to provide effort trends graphically starting from 2003.

The effort deployed in Gross tonnage days (GTdays) and number of vessels are not described in this report but can be found on the STECF SGMOS 10-05 website under the Final Report section: https://stecf.jrc.ec.europa.eu/meetings/2010?p_p_id=62_INSTANCE_Hk1G&p_p_lifecycle=0&p_p_state=maximized&p_p_mode=view&p_p_col_id=column-2&p_p_col_count=1&_62_INSTANCE_Hk1G_struts_action=%2Fjournal_articles%2Fview&_62_INSTANCE_Hk1G_groupId=43805&_62_INSTANCE_Hk1G_articleId=44677&_62_INSTANCE_Hk1G_version=1.0

Information on the nominal effort of the 2 derogations (3a and 3b) is given in Table 10.2.3.

The otter fleet increased since 2003 with a maximum effort level in 2007 that was nearly doubled compared to 2003. The second important fleet in 2003 decreased since 2006 following a large decommissioning due to the anchovy crisis.

Trammel nets increased in 2005, the effort being multiplied nearly by a factor 3 compared to 2003. Since then, the effort has fluctuated around the level observed in 2005.

Gillnets increased from 2003 to 2006 and decreased since then.

Table 10.2.1 – Bay of Biscay - Trend in nominal effort (kW*days at sea) by existing derogations given in Table 1 of Annex IIC (Coun. Reg. 43/2009) and Member State, 2000-2009. Derogations are sorted by gear, special condition (SPECON), and country. Data qualities are summarised in Section 5 of the report.

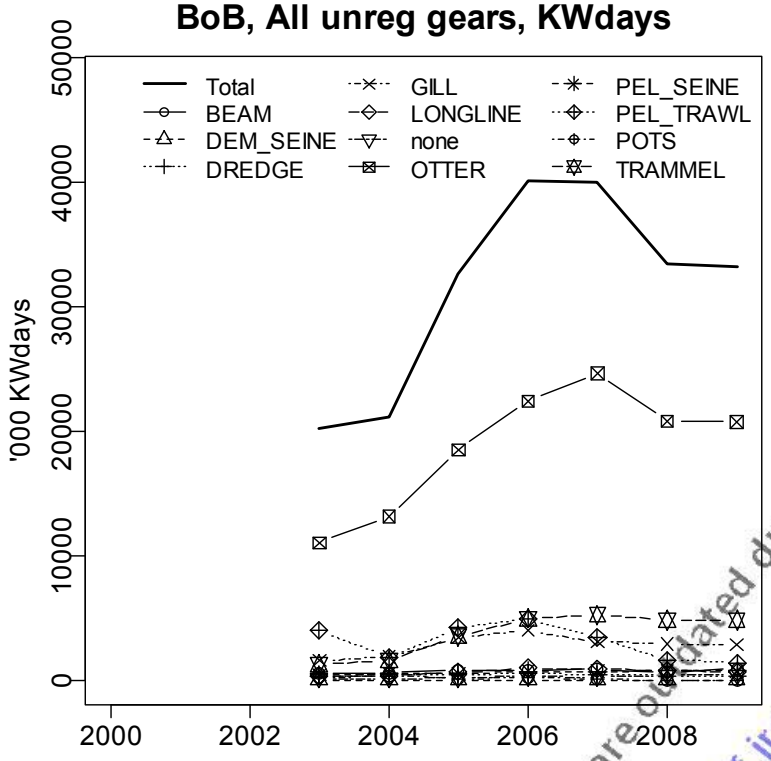
REG_AREA	REG GEAR COD	COUNTRY	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
8ab	BEAM	BEL	913195	820583	771813	618667	595082	766754	848390	887031	699561	926934
8ab		ENG									880	
8ab		FRA				15860	26032	35522	4104	438		
8ab		NED		934808								
8ab	**BEAM Total**		**913195**	**1755391**	**771813**	**634527**	**621114**	**802276**	**852494**	**887469**	**700441**	**926934**
8ab	DEM_SEINE	NED										12776
8ab	**DEM_SEINE Total**											**12776**
8ab	DREDGE	ENG		4183								
8ab		FRA	260467	331896	1352166	397865	421943	472463	598415	504995	411002	399497
8ab		IRL				14754						
8ab		SCO		25124								
8ab	**DREDGE Total**		**260467**	**361203**	**1352166**	**412619**	**421943**	**472463**	**598415**	**504995**	**411002**	**399497**
8ab	GILL	ENG			2730		48409	35499	161852	54377	18347	42007
8ab		FRA	1072873	1440398	5838608	1607633	1815567	3345574	3826232	2994200	2834686	2809728
8ab		SCO				7163	62035	78826	33150	54702	96598	29681
8ab	**GILL Total**		**1072873**	**1440398**	**5841338**	**1614796**	**1926011**	**3459899**	**4021234**	**3103279**	**2949641**	**2881416**
8ab	LONGLINE	ENG	6716	17364	57670	84319	110156	71646	66968	54601	20237	
8ab		FRA	88254	176129	891975	235133	300458	601160	916800	858475	740526	740526
8ab		IRL						842	2105	1263		
8ab		SCO		3001					6797	1378	22160	
8ab	**LONGLINE Total**		**94970**	**196494**	**949645**	**319452**	**410614**	**673648**	**992670**	**915717**	**782923**	**740526**
8ab	OTTER	DEN	21694							11850		58516
8ab		ENG	13041	94	2855	67484	129094	78252	104436			7920
8ab		FRA	4762749	7970949	38306784	11003670	13058268	16462096	22354632	24659630	20854560	20727711
8ab		IRL		242	11050		985		4854			
8ab		NIR										1624
8ab		SCO			4634							
8ab	**OTTER Total**		**4797484**	**7971285**	**38325323**	**11071154**	**13188347**	**18540348**	**22463922**	**24671380**	**20854560**	**20795771**
8ab	PEL_SEINE	FRA	131568	449004	2026613	466646	540507	568973	756785	745857	770304	769989
8ab	**PEL_SEINE Total**		**131568**	**449004**	**2026613**	**466646**	**540507**	**568973**	**756785**	**745857**	**770304**	**769989**
8ab	PEL_TRAWL	DEN	86110	26710					38027	174671	141787	179083
8ab		ENG	89855	68867	275666	166043	207062	127741	92445	36288	155677	217305
8ab		FRA	3057444	2472517	14403101	3035742	1135975	3148397	4076421	3124058	888396	828481
8ab		GER	246685	323841	191411	30222	122593	263370	181553		85325	20800
8ab		IRL	320050	100508	142989	136414	302436	212290	99746	67199	20000	4028
8ab		NED	2173932	3405198	1434000	685575	114007	512294	460863	94666	378758	166742
8ab		NIR										541
8ab		SCO	14662			3972						19496
8ab	**PEL_TRAWL Total**		**5988738**	**6397641**	**16447167**	**4027968**	**1882073**	**4264092**	**4949055**	**3496882**	**1669943**	**1436476**
8ab	POTS	ENG					10185					
8ab		FRA	229712	161728	618764	229673	347756	176851	187550	164883	24911	24911
8ab		GER				14112	21168		13631	11500	7056	
8ab	**POTS Total**		**229712**	**161728**	**618764**	**243785**	**379109**	**176851**	**201181**	**176383**	**31967**	**24911**
8ab	TRAMMEL	ENG									547	
8ab		FRA	506847	741206	3600220	1277751	1589582	3558877	5004728	5255173	4869305	4867175
8ab	**TRAMMEL Total**		**506847**	**741206**	**3600220**	**1277751**	**1589582**	**3558877**	**5004728**	**5255173**	**4869852**	**4867175**
8ab	none	FRA	152647	214786	1027994	183430	179275	191342	348466	278666	449815	449815
8ab		IRL						25000				
8ab	**none Total**		**152647**	**214786**	**1027994**	**183430**	**179275**	**216342**	**348466**	**278666**	**449815**	**449815**
8ab	**Grand Total**		**14148501**	**19689136**	**70961043**	**20252128**	**21138575**	**32733769**	**40188950**	**40035801**	**33490448**	**33305286**

Table 10.2.2 – Bay of Biscay – Percentage difference in effort (kW*days at sea) by existing derogations given in Table 1 of Annex IIC (Coun. Reg. 43/2009) and Member State, 2003-2008 between the data provided in 2008 and 2009. Derogations are sorted by gear, special condition (SPECON), and country. Data qualities are summarised in section 5.

REG AREA COD	REG GEAR COD	COUNTRY	2000	2001	2002	2003	2004	2005	2006	2007	2008
BoB	BEAM	BEL	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	BEAM	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	BEAM	FRA	0%	0%	0%	37%	-14%	5%	0%	0%	0%
BoB	BEAM	NED	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	DREDGE	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	DREDGE	FRA	1364%	628%	2986%	1104%	1618%	1923%	3368%	2071%	484%
BoB	DREDGE	IRL	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	DREDGE	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	GILL	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	GILL	FRA	56%	59%	442%	49%	52%	97%	190%	183%	148%
BoB	GILL	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	LONGLINE	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	LONGLINE	FRA	390%	339%	2699%	737%	447%	539%	1265%	1031%	658%
BoB	LONGLINE	IRL	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	LONGLINE	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	none	FRA	6385%	12209%	0%	1078900%	3942%	1448%	9558%	4917%	12837%
BoB	none	IRL	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	OTTER	DEN	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	OTTER	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	OTTER	FRA	-33%	-14%	259%	-12%	-11%	-7%	39%	41%	-5%
BoB	OTTER	IRL	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	OTTER	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	PEL_SEINE	FRA	14311%	28943%	1250896%	70819%	6293%	0%	0%	20475%	0%
BoB	PEL_TRAWL	DEN	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	PEL_TRAWL	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	PEL_TRAWL	FRA	6290%	11241%	45950%	4351%	4657%	8388%	4548%	2073%	711%
BoB	PEL_TRAWL	GER	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	PEL_TRAWL	IRL	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	PEL_TRAWL	NED	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	PEL_TRAWL	SCO	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	POTS	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	POTS	FRA	79111%	0%	224905%	76203%	1287885%	10981%	24940%	25583%	748%
BoB	POTS	GER	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	TRAMMEL	ENG	0%	0%	0%	0%	0%	0%	0%	0%	0%
BoB	TRAMMEL	FRA	-21%	-18%	264%	3%	8%	14%	34%	11%	-9%

Table 10.2.3 – Bay of Biscay - Trend in nominal effort (kW*days at sea) by derogations given in Table 1 of Annex IIC (Coun. Reg. 43/2009), 2000-9. Derogations are sorted by gear and special condition (SPECON). Data qualities are summarised in section 5.

REG_AREA	REG GEAR COD	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Rel. Change to 03	Rel. Change to 08
BoB	BEAM Total	913195	1756391	771813	634527	621144	802276	852494	887469	700441	926934	0.46	0.32
BoB	DEM_SEINE Total										12776		
BoB	DREDGE Total	260467	361203	1352166	412619	421943	472463	598415	504995	411002	399497	-0.03	-0.03
BoB	GILL Total	1072873	1440398	5841338	1614796	1926011	3459899	4021234	3103279	2949641	2881416	0.78	-0.02
BoB	LONGLINE Total	94970	196494	949645	319452	410614	673648	992670	915717	782923	740526	1.32	-0.05
BoB	OTTER Total	4797484	7971285	38325323	11071154	13188347	18540348	22463922	24671380	20854560	20795771	0.88	0.00
BoB	PEL_SEINE Total	131568	449004	2026813	466646	540507	568973	756785	745857	770304	769989	0.65	0.00
BoB	PEL_TRAWL Total	5988738	6397641	16447167	4027968	1882073	4264092	4949055	3496882	1669943	1436476	-0.64	-0.14
BoB	POTS Total	229712	161728	618764	243785	379109	176851	201181	176383	31967	24911	-0.90	-0.22
BoB	TRAMMEL Total	506847	741206	3600220	1277751	1589582	3558877	5004728	5255173	4869852	4867175	2.81	0.00
BoB	none Total	152647	214786	1027994	183430	179275	216342	348466	278666	449815	449815	1.45	0.00
Sum		**14148501**	**19689136**	**70961043**	**20252128**	**21138575**	**32733769**	**40188950**	**40035801**	**33490448**	**33305286**	**0.64**	**-0.01**



Figures 10.2.1 – Bay of Biscay -Trend in nominal effort (kW*days at sea) by derogations given in Table 1 of Annex IIC (Coun. Reg. 43/2009), 2003-2009. Derogations are sorted by gear and special condition (SPECON). Data qualities are summarised in section 5.5.2 and Table 5.5.2.1.

10.3. Trend in catch estimates 2003-2009 by derogation the Bay of Biscay

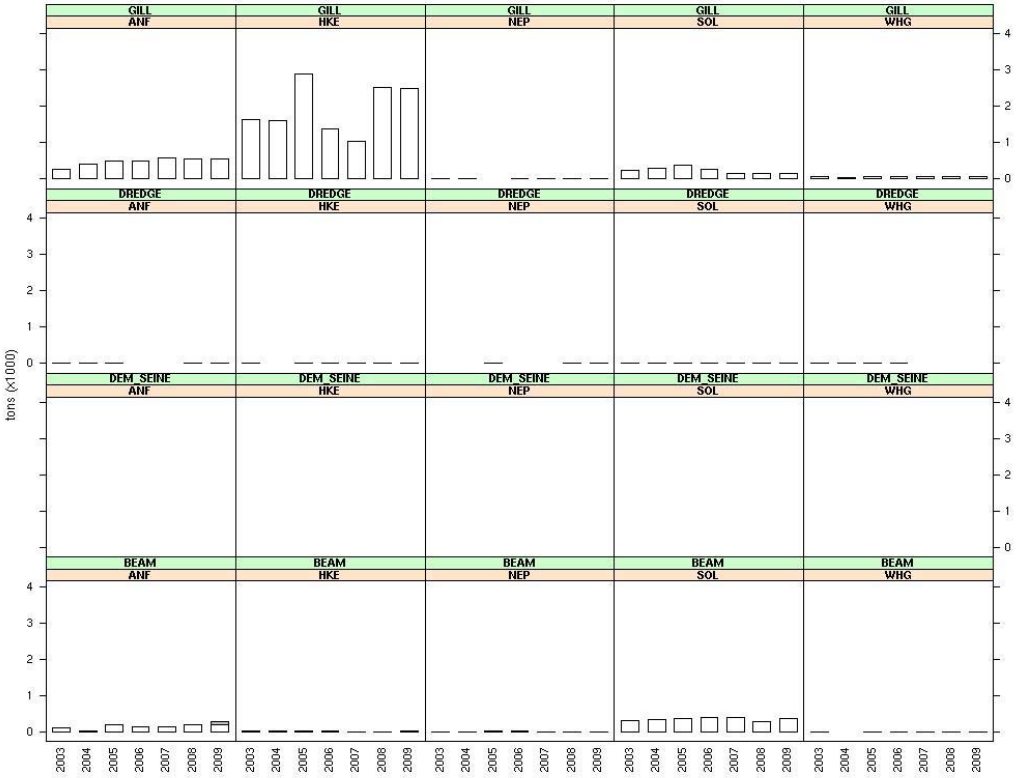
Note: only discard information available from Belgium for beam (SOL-HKE-ANF-WHG) for 2009.

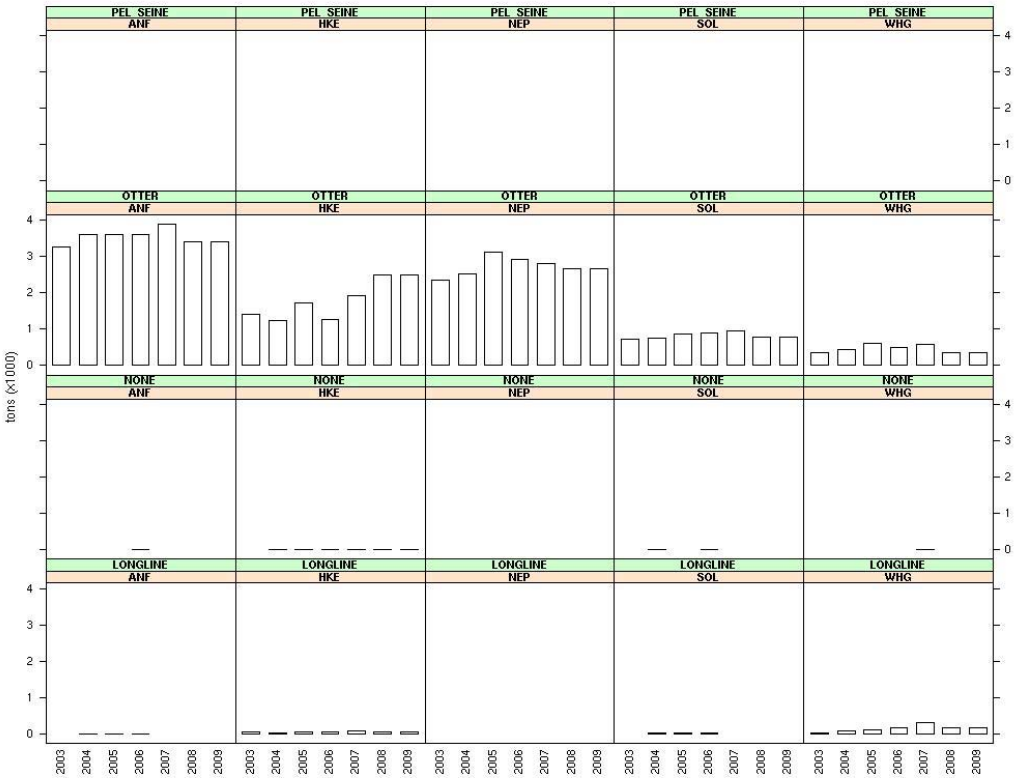
Although the data available for the review of Annex IIC of regulation 43/2009 comes from all countries involved in the fisheries, excepted spain, there is little information on discards for most of the species. Only very sparse discard information is available from Belgium for the beam fishery and for sole, hake, anglerfish and whiting. The lack of discard information, increases the likelihood of incorrect assumptions on total removals for that species.

The following Table 10.3.1 lists the landings, discards and discard rates for the main species by derogations.

For brevity, the following sections represent the landings and discards by derogation in weight for a subset of the species caught ie. anglerfish, (ANF), hake, (HKE), *Nephrops* (NEP), sole (SOL), and whiting (WHG). However, additional data queries for other species can be made depending on data provisions of the national catches by the experts or national institutes. The data given in the table form the basis of Figure 10.3.1 displaying the relative catch compositions by derogations for the years 2003-2009. The lack of the dark bars representing discards also indicates lack of observations rather than low discard numbers.

Figure 10.3.1 shows that in the trammel fishery, landings of sole have substantially increased in the last 6 years. Landings of hake seem to have fluctuated for Gillnet and increased for otter.


GILL
DREDGE
DEM_SEINE
BEAM
ANF
HKE
NEP
SOL
WHG
tons (x1000)
2003
2004
2005
2006
2007
2008
2009


PEL_SEINE
OTTER
NONE
LONGLINE
ANF
HKE
NEP
SOL
WHG
tons (x1000)
2003
2004
2005
2006
2007
2008
2009

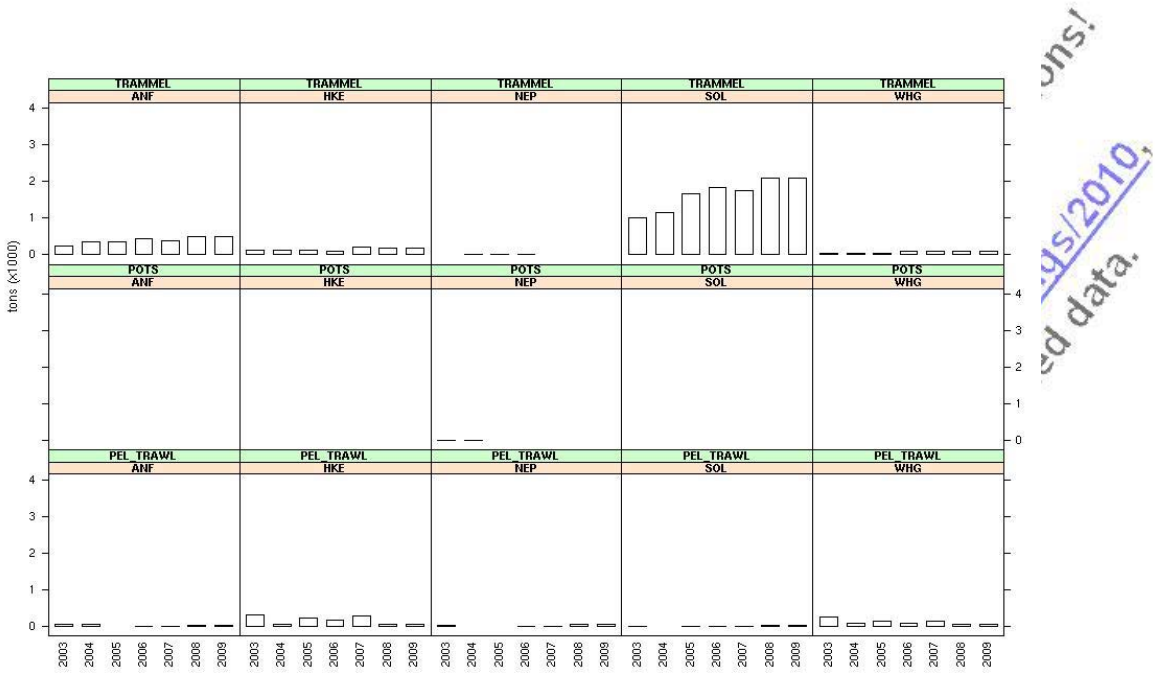


Fig. 10.3.1 – Bay of Biscay - Landings (t) and discard (t) by derogation and species, 2003-2009 (from left to right). Note that information collected on discards is incomplete, so the apparent absence of discards in the figures for a given species/gear does not necessarily means zero discards.

10.4. Trend in LPUE of anglerfish, hake, sole, nephrops and whiting

Very limited discards are available for these species, therefore LPUE are presented in Tables 8.4.1 to 8.4.5 and Figures 8.4.1 to 8.4.5 respectively.

For anglerfish, the LPUE are quite similar among fleets. A slight decrease can be seen for trammel and otter in the recent years whereas LPUE for gill and beam increased. LPUE for beam seems to fluctuate around 200 g/(KW*days).

Hake LPUE's by gill are much higher than all the other gears. A drop in 2006 and 2007 from 800 g/(KW*days) to less than 400 g/(KW*days) is observed.

Nephops are mainly caught by otters. Nephrop's LPUE has gradually decreased since 2003 from 210 g/(KW*days) to 122 g/(KW*days) in 2009.

Sole's LPUE by trammel and beam are quite similar and follow the same trend with a gradual decrease from 2003 onwards (from >500 g/(KW*days) to 400 g/(KW*days)).

Whiting's LPUE by otter are decreasing decrease from 2003 onwards. Whiting's LPUE by gill and trammel are similar and follow the same trend with a decrease from 2003 to 2005 and a slight increase from 2006.

Table 10.4.1 – Bay of Biscay - anglerfish LPUE (g/(kW*days)) by derogation and year, 2003-2009. Note: Discard information for the Bay of Biscay are sparse and therefore LPUE is provided in the table.

ANNEX	SPECIES	REG AREA COD	REG GEAR COD	SPECON	LPUE 2003	LPUE 2004	LPUE 2005	LPUE 2006	LPUE 2007	LPUE 2008	LPUE 2009	LPUE 2007-2009
BoB	ANF	BoB	BEAM	none	184	13	226	163	160	268	210	209
BoB	ANF	BoB	DREDGE	none	2	2	2	0	0	2	3	2
BoB	ANF	BoB	GILL	none	157	210	139	118	184	183	193	187
BoB	ANF	BoB	LONGLINE	none	0	2	1	2	0	0	0	0
BoB	ANF	BoB	none	none		0	0	9	0	0	0	0
BoB	ANF	BoB	OTTER	none	295	273	194	160	157	163	163	161
BoB	ANF	BoB	PEL_TRAWL	none	10	20	0	0	1	3	3	2
BoB	ANF	BoB	POTS	none	0		0	0	0	0	0	0
BoB	ANF	BoB	TRAMMEL	none	177	222	100	87	72	98	98	89

Table 10.4.2 – Bay of Biscay - hake LPUE (g/(kW*days)) by derogation and year, 2003-2009. Note: Discard information for the Bay of Biscay are sparse and therefore LPUE is provided in the table.

ANNEX	SPECIES	REG AREA COD	REG GEAR COD	SPECON	LPUE 2003	LPUE 2004	LPUE 2005	LPUE 2006	LPUE 2007	LPUE 2008	LPUE 2009	LPUE 2007-2009
BoB	HKE	BoB	BEAM	none	22	18	20	12	2	4	8	5
BoB	HKE	BoB	DEM_SEINE	none	0	0	0	0	0	0	0	0
BoB	HKE	BoB	DREDGE	none	7	0	4	5	2	2	3	2
BoB	HKE	BoB	GILL	none	1011	833	836	342	331	852	862	674
BoB	HKE	BoB	LONGLINE	none	110	54	50	57	84	69	73	76
BoB	HKE	BoB	none	none		6	5	3	14	4	4	7
BoB	HKE	BoB	OTTER	none	127	94	93	67	77	119	119	104
BoB	HKE	BoB	PEL_SEINE	none	0	0	0	0	0	0	0	0
BoB	HKE	BoB	PEL_TRAWL	none	73	26	51	33	77	31	35	56
BoB	HKE	BoB	POTS	none				0	0	0	0	0
BoB	HKE	BoB	TRAMMEL	none	92	78	29	17	37	32	32	34

Table 10.4.3 – Bay of Biscay - Nephrops LPUE (g/(kW*days)) by derogation and year, 2003-2009. Note: Discard information for the Bay of Biscay are sparse and therefore LPUE is provided in the table.

ANNEX	SPECIES	REG AREA COD	REG GEAR COD	SPECON	LPUE 2003	LPUE 2004	LPUE 2005	LPUE 2006	LPUE 2007	LPUE 2008	LPUE 2009	LPUE 2007-2009
BoB	NEP	BoB	BEAM	none	5	6	10	7	3	1	1	2
BoB	NEP	BoB	DREDGE	none	0	0	4	0	0	2	3	2
BoB	NEP	BoB	GILL	none	0	1	0	0	0	1	1	1
BoB	NEP	BoB	LONGLINE	none	0	0			0	0	0	0
BoB	NEP	BoB	none	none				0	0	0	0	0
BoB	NEP	BoB	OTTER	none	210	190	168	129	114	128	127	122
BoB	NEP	BoB	PEL_TRAWL	none	1		0	0	1	20	24	11
BoB	NEP	BoB	POTS	none	4	5	0		0	0	0	0
BoB	NEP	BoB	TRAMMEL	none	0	1	0	1	0	0	0	0

Table 10.4.4 – Bay of Biscay - sole LPUE (g/(kW*days)) by derogation and year, 2003-2009. Note: Discard information for the Bay of Biscay are sparse and therefore LPUE is provided in the table.

ANNEX	SPECIES	REG AREA COD	REG GEAR COD	SPECON	LPUE 2003	LPUE 2004	LPUE 2005	LPUE 2006	LPUE 2007	LPUE 2008	LPUE 2009	LPUE 2007-2009
BoB	SOL	BoB	BEAM	none	466	515	436	446	448	410	391	416
BoB	SOL	BoB	DREDGE	none	5	2	6	3	6	5	5	5
BoB	SOL	BoB	GILL	none	152	152	112	67	50	54	55	53
BoB	SOL	BoB	LONGLINE	none	0	24	15	9	0	0	0	0
BoB	SOL	BoB	none	none	0	6	0	14	0	0	0	0
BoB	SOL	BoB	OTTER	none	65	56	47	40	38	37	37	38
BoB	SOL	BoB	PEL_SEINE	none		0		0	0	0	0	0
BoB	SOL	BoB	PEL_TRAWL	none	0	0	0	0	1	3	3	2
BoB	SOL	BoB	POTS	none	0			0	0	0	0	0
BoB	SOL	BoB	TRAMMEL	none	776	719	463	367	332	427	427	394

Table 10.4.5 – Bay of Biscay - whiting LPUE (g/(kW*days)) by derogation and year, 2003-2009. Note: Discard information for the Bay of Biscay are sparse and therefore LPUE is provided in the table.

ANNEX	SPECIES	REG AREA COD	REG GEAR COD	SPECON	LPUE 2003	LPUE 2004	LPUE 2005	LPUE 2006	LPUE 2007	LPUE 2008	LPUE 2009	LPUE 2007-2009
BoB	WHG	BoB	BEAM	none	2	0	4	2	5	1	2	3
BoB	WHG	BoB	DEM_SEINE	none	0	0	0	0	0	0	0	0
BoB	WHG	BoB	DREDGE	none	5	5	2	2	0	0	0	0
BoB	WHG	BoB	GILL	none	38	20	15	16	16	18	19	18
BoB	WHG	BoB	LONGLINE	none	28	156	162	153	330	217	230	263
BoB	WHG	BoB	none	none	0	0		0	11	0	0	3
BoB	WHG	BoB	OTTER	none	32	32	33	22	23	16	16	19
BoB	WHG	BoB	PEL_SEINE	none				0	0	0	0	0
BoB	WHG	BoB	PEL_TRAWL	none	59	43	30	18	38	28	30	34
BoB	WHG	BoB	POTS	none					0	0	0	0
BoB	WHG	BoB	TRAMMEL	none	27	20	12	15	14	18	18	16

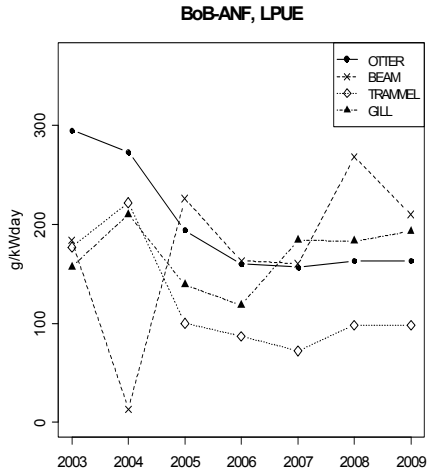


Figure 10.4.1- Bay of Biscay - anglerfish – LPUE (g/(KW*days)) by derogation and year, 2003-2009. Note: Discard information for the Bay of Biscay are sparse and therefore the LPUE has been plotted.

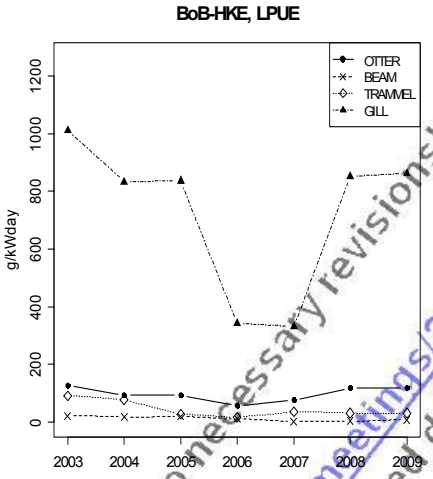


Figure 10.4.2- Bay of Biscay - hake – LPUE (g/(KW*days)) by derogation and year, 2003-2009. Note: Discard information for the Bay of Biscay are sparse and therefore the LPUE has been plotted.

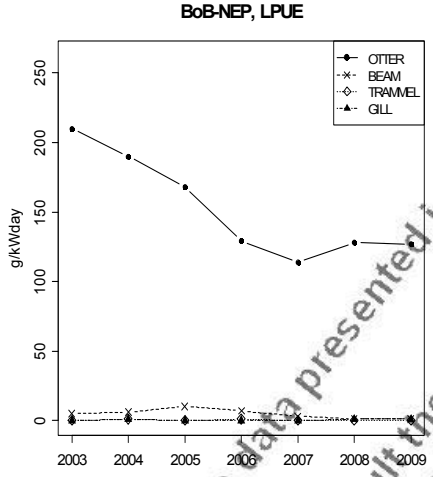


Figure 10.4.3- Bay of Biscay - nephrops – LPUE (g/(KW*days)) by derogation and year, 2003-2009. Note: Discard information for the Bay of Biscay are

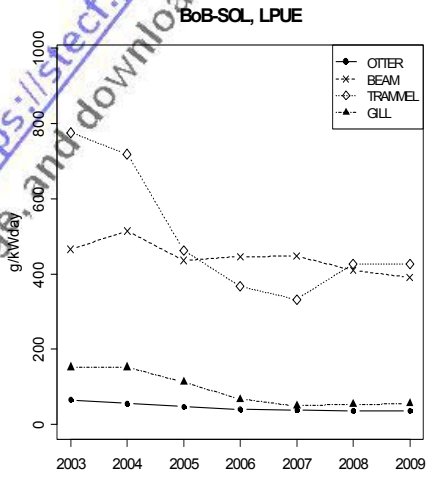


Figure 10.4.4- Bay of Biscay - sole – LPUE (g/(KW*days)) by derogation and year, 2003-2009. Note: Discard information for the Bay of Biscay are sparse and therefore the LPUE has been plotted.

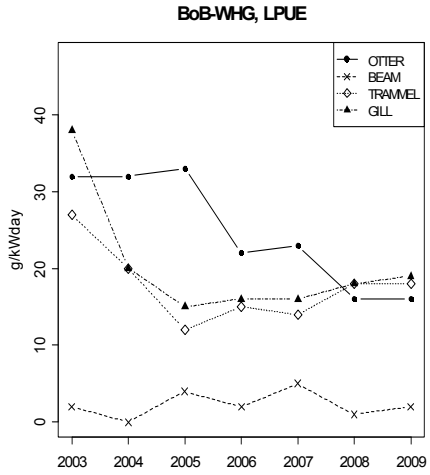


Figure 10.4.5- Bay of Biscay - whiting – LPUE (g/(KW*days)) by derogation and year, 2003-2009. Note: Discard information for the Bay of Biscay are sparse and therefore the LPUE has been plotted.

10.5. Ranked derogations according to relative contributions to sole catches

No ranking have been done for Bay of Biscay.

10.6. Unregulated gear in the Bay of Biscay

Table 10.2.1. gives the trends of the effort reported in this category. Given the category definition, it refers to non-regulated gear (pots etc.) only.

10.7. Fishing effort and catches (landings and discards) of sole and associated species of vessels <10m

10.7.1. General considerations regarding catches of vessels <10m

Table 10.7.1 shows a preliminary overview of the catches of some main species (anglerfish, hake, Nephrops, sole, and whiting in the Bay of Biscay by the vessels <10m in 2009. It should be noted that not all countries have submitted information and that the total figures are therefore likely to give an underestimation of the catches of this vessel category.

STECF-SGMOS would like to mention that although these figures are underestimates, they indicate that at least 7% and 9% of the total sole and whiting catches respectively are taken by vessels <10m.

Table 10.7.1 – Bay of Biscay – Overview of anglerfish, hake, sole, Nephrops and whiting catches by vessels <10m 2003- 2009.

REG_AREA	REG_GEAR	SPECIES	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
BoB	BEAM	ANF				117	8	181	139	142	188	195
BoB	DREDGE	ANF				1	1	1	0	0	1	1
BoB	GILL	ANF				253	404	481	476	571	541	555
BoB	LONGLINE	ANF				0	1	1	2	0	0	0
BoB	OTTER	ANF				3268	3605	3593	3585	3877	3406	3393
BoB	PEL_TRAWL	ANF				42	38	0	1	3	5	5
BoB	POTS	ANF				0		0	0	0		
BoB	TRAMMEL	ANF				226	352	355	437	380	476	476
BoB	none	ANF					0	0	3	0	0	0
Sum_O10m		**ANF**				**3907**	**4409**	**4612**	**4643**	**4973**	**4617**	**4625**
Sum_U10m		**ANF**	**6**	**2**	**20**	**34**	**45**	**64**	**55**	**32**	**19**	**19**
%						**1**	**1**	**1**	**1**	**1**	**0**	**0**
BoB	BEAM	HKE				14	11	16	10	2	3	6
BoB	DEM_SEINE	HKE										0
BoB	DREDGE	HKE				3	0	2	3	1	1	1
BoB	GILL	HKE				1632	1605	2890	1377	1026	2513	2485
BoB	LONGLINE	HKE				34	22	34	57	78	54	54
BoB	OTTER	HKE				1408	1234	1716	1269	1906	2486	2472
BoB	PEL_SEINE	HKE				0	0	0	0	0	0	0
BoB	PEL_TRAWL	HKE				293	48	217	162	271	52	51
BoB	POTS	HKE							0	0		
BoB	TRAMMEL	HKE				118	124	105	85	195	158	157
BoB	none	HKE					1	1	1	4	2	2
Sum_O10m		**HKE**				**3502**	**3045**	**4981**	**2964**	**3483**	**5269**	**5228**
Sum_U10m		**HKE**	**31**	**83**	**90**	**98**	**89**	**62**	**107**	**155**	**138**	**138**
%						**3**	**3**	**1**	**4**	**4**	**3**	**3**
BoB	BEAM	NEP				3	4	8	6	3	1	1
BoB	DREDGE	NEP				0	0	2	0	0	1	1
BoB	GILL	NEP				1	2	0	2	1	3	3
BoB	LONGLINE	NEP				0	0				0	0
BoB	OTTER	NEP				2329	2506	3123	2908	2801	2659	2650
BoB	PEL_TRAWL	NEP				5		0	2	4	34	34
BoB	POTS	NEP				1	2	0		0		
BoB	TRAMMEL	NEP				0	1	1	5	0	0	0
BoB	none	NEP							0	0	0	0
Sum_O10m		**NEP**				**2339**	**2515**	**3134**	**2923**	**2809**	**2698**	**2689**
Sum_U10m		**NEP**	**0**	**1**	**10**	**4**	**7**	**21**	**15**	**9**	**0**	**0**
%						**0**	**0**	**1**	**1**	**0**	**0**	**0**
BoB	BEAM	SOL				296	320	350	360	398	287	362
BoB	DREDGE	SOL				2	2	3	2	3	2	2
BoB	GILL	SOL				245	293	387	270	156	159	158
BoB	LONGLINE	SOL				0	10	10	9	0	0	0
BoB	OTTER	SOL				716	745	865	890	948	777	773
BoB	PEL_SEINE	SOL					0		0			
BoB	PEL_TRAWL	SOL				2	0	2	1	2	5	5
BoB	POTS	SOL				0			0	0		
BoB	TRAMMEL	SOL				991	1143	1650	1838	1744	2080	2077
BoB	none	SOL				0	1	0	5	0	0	0
Sum_O10m		**SOL**				**2252**	**2514**	**3267**	**3395**	**3251**	**3310**	**3377**
Sum_U10m		**SOL**	**69**	**84**	**122**	**95**	**119**	**105**	**188**	**225**	**133**	**133**
%						**4**	**5**	**3**	**6**	**7**	**4**	**4**
BoB	BEAM	WHG				1	0	3	2	4	1	2
BoB	DEM_SEINE	WHG										0
BoB	DREDGE	WHG				2	2	1	1	0	0	0
BoB	GILL	WHG				62	39	53	64	52	55	55
BoB	LONGLINE	WHG				9	64	110	152	302	170	170
BoB	OTTER	WHG				350	418	610	483	576	330	329
BoB	PEL_SEINE	WHG							0			
BoB	PEL_TRAWL	WHG				238	80	130	87	133	45	44
BoB	POTS	WHG								0		
BoB	TRAMMEL	WHG				34	31	42	74	72	87	87
BoB	none	WHG				0	0		0	3	0	0
Sum_O10m		**WHG**				**696**	**634**	**949**	**863**	**1142**	**688**	**687**
Sum_U10m		**WHG**	**10**	**27**	**27**	**16**	**46**	**56**	**80**	**73**	**37**	**37**
%						**2**	**7**	**6**	**9**	**6**	**5**	**5**

10.8. Spatial distribution patterns of effective fishing effort 2003-2009

Figure 10.8.1 to 10.8.11 show the spatial distribution of the effective fishing effort for all the different fleets operating in the Bay of Biscay during the period 2003 to 2009. The pattern seems similar for the whole period for most of the fleets.

The effort is mostly distributed all across the gulf with somewhat higher values close to the estuaries (Gironde, baie de vilaine…).

For trammel and Otter that are the two fisheries for which the effort increased between 2003-2007, the spatial effort allocation seems to follow the same trends, starting mainly in south Brittany and increasing in all the area in the following years.

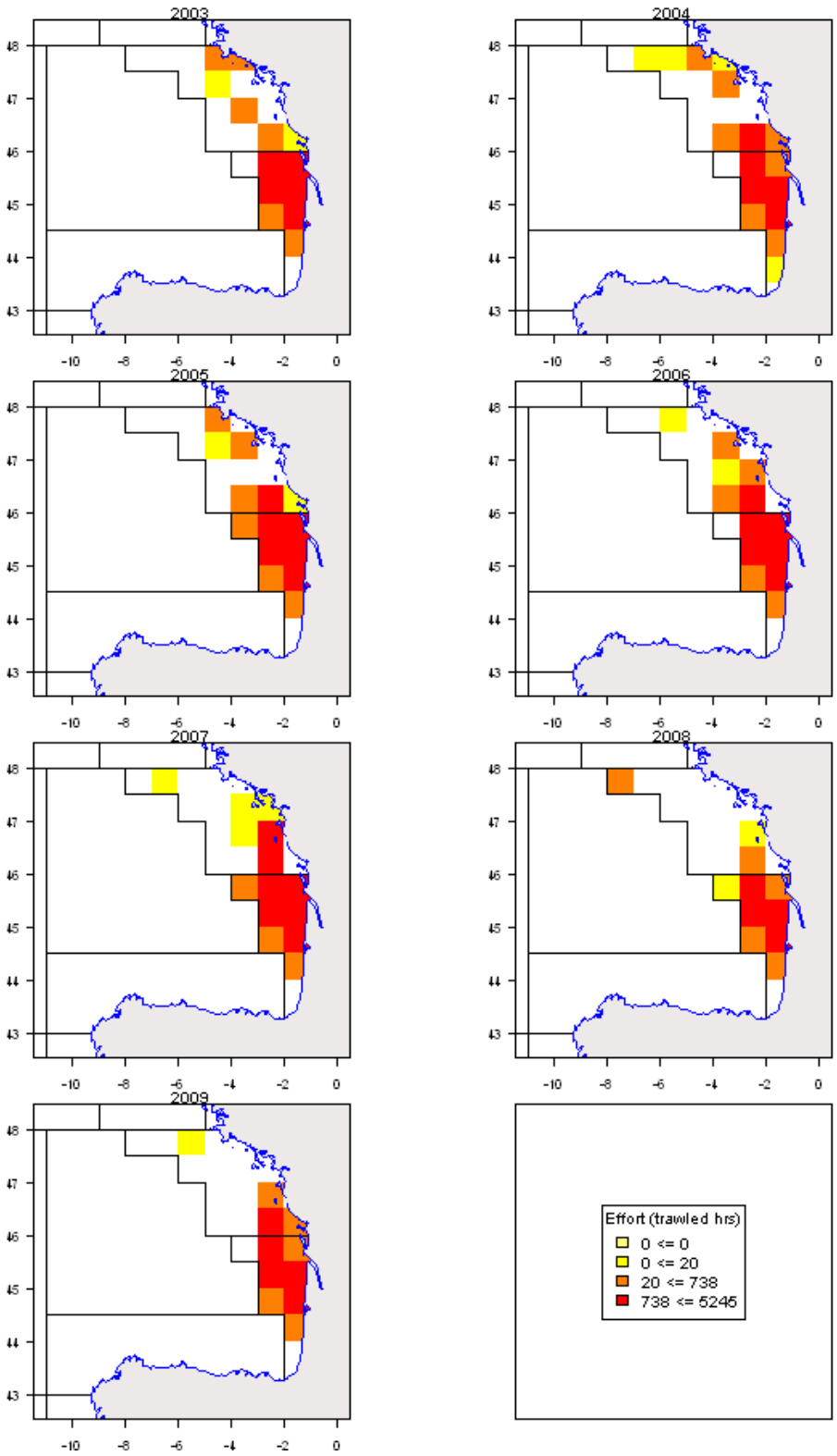


Figure 10.8.1. Bay of Biscay. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for the Beam trawl fleet, 2003-2009.

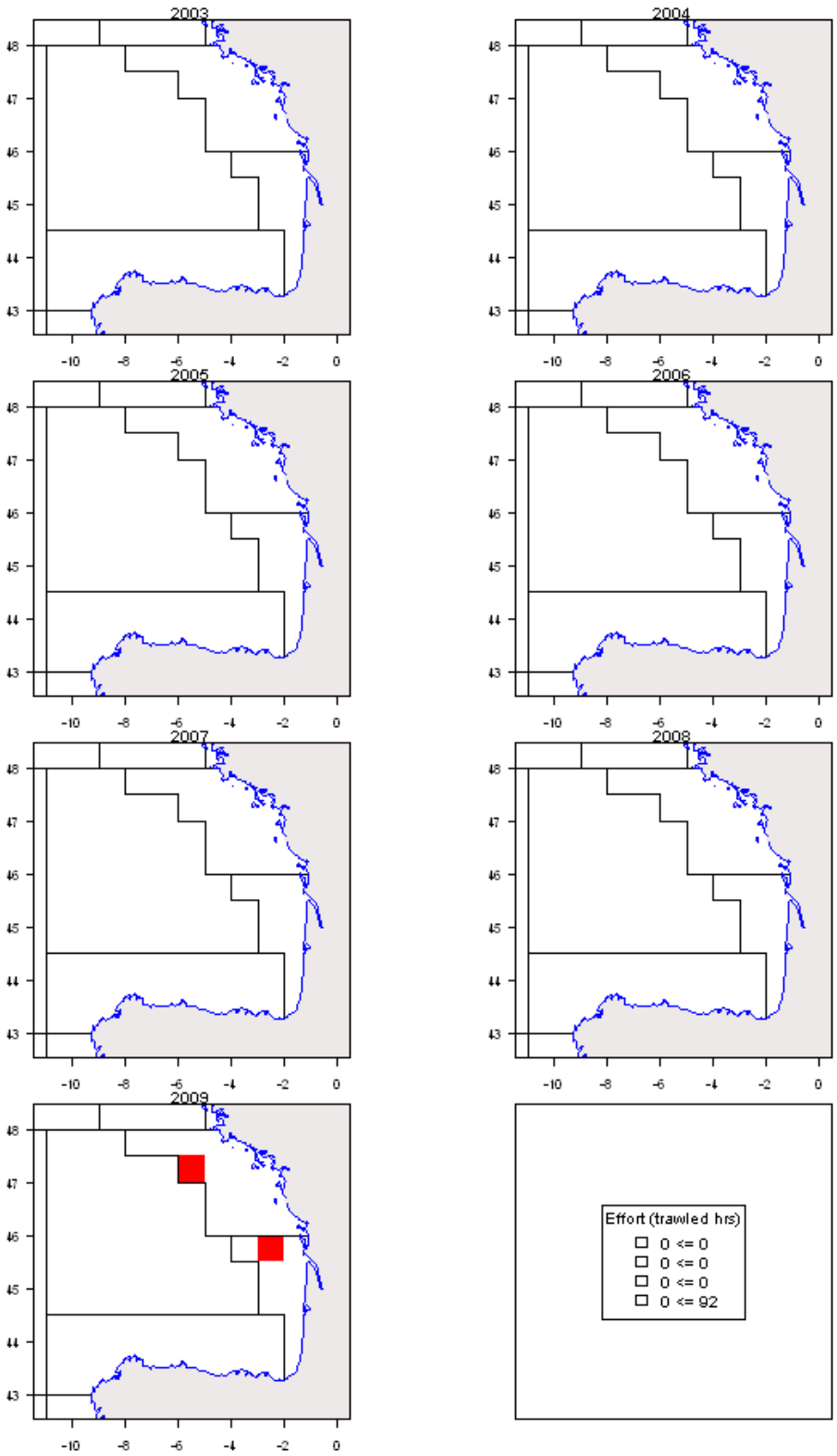


Figure 10.8.2. Bay of Biscay. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Demersal Seine, 2003-2009.

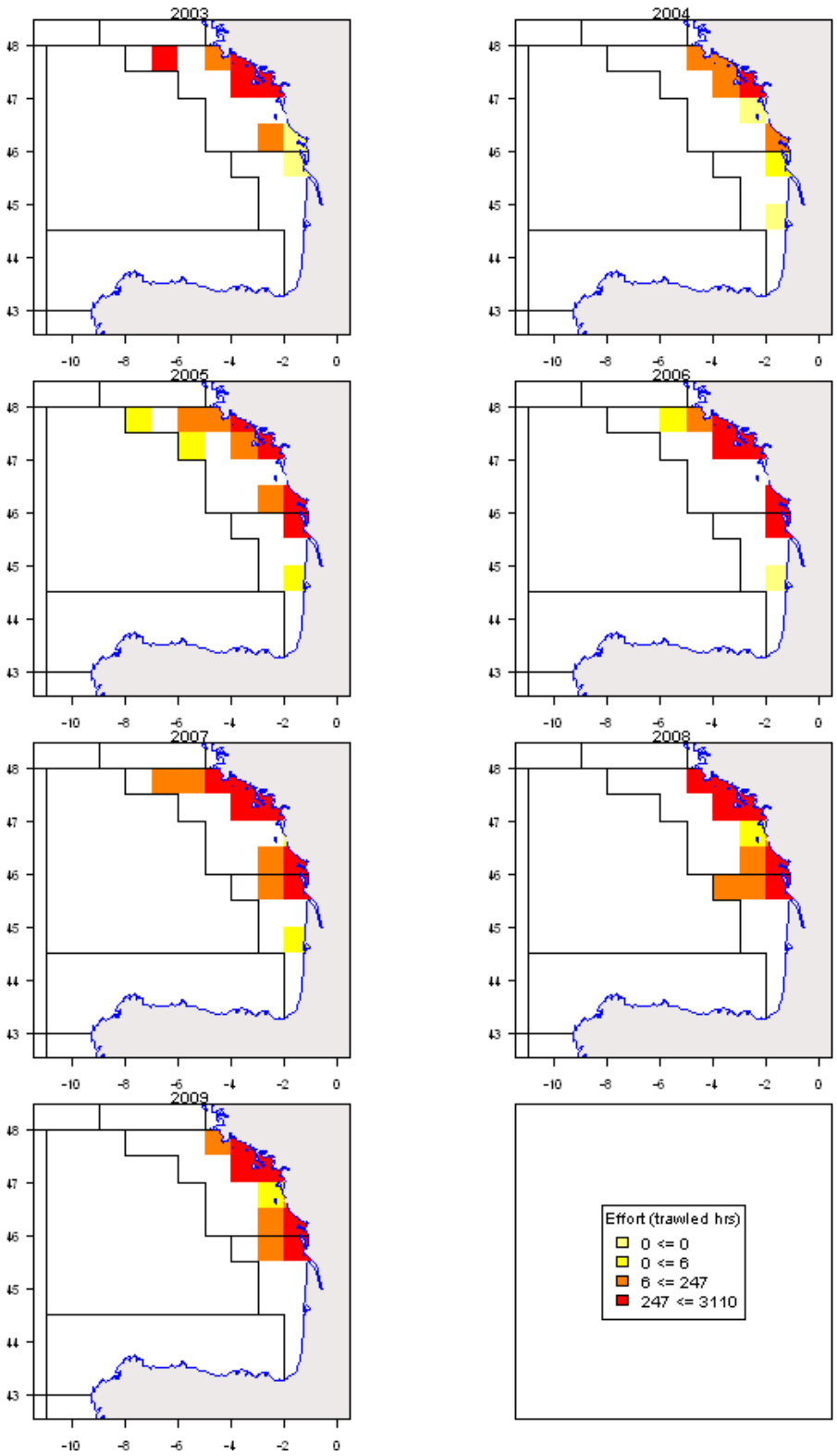


Figure 10.8.3. Bay of Biscay. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Dredges, 2003-2009.

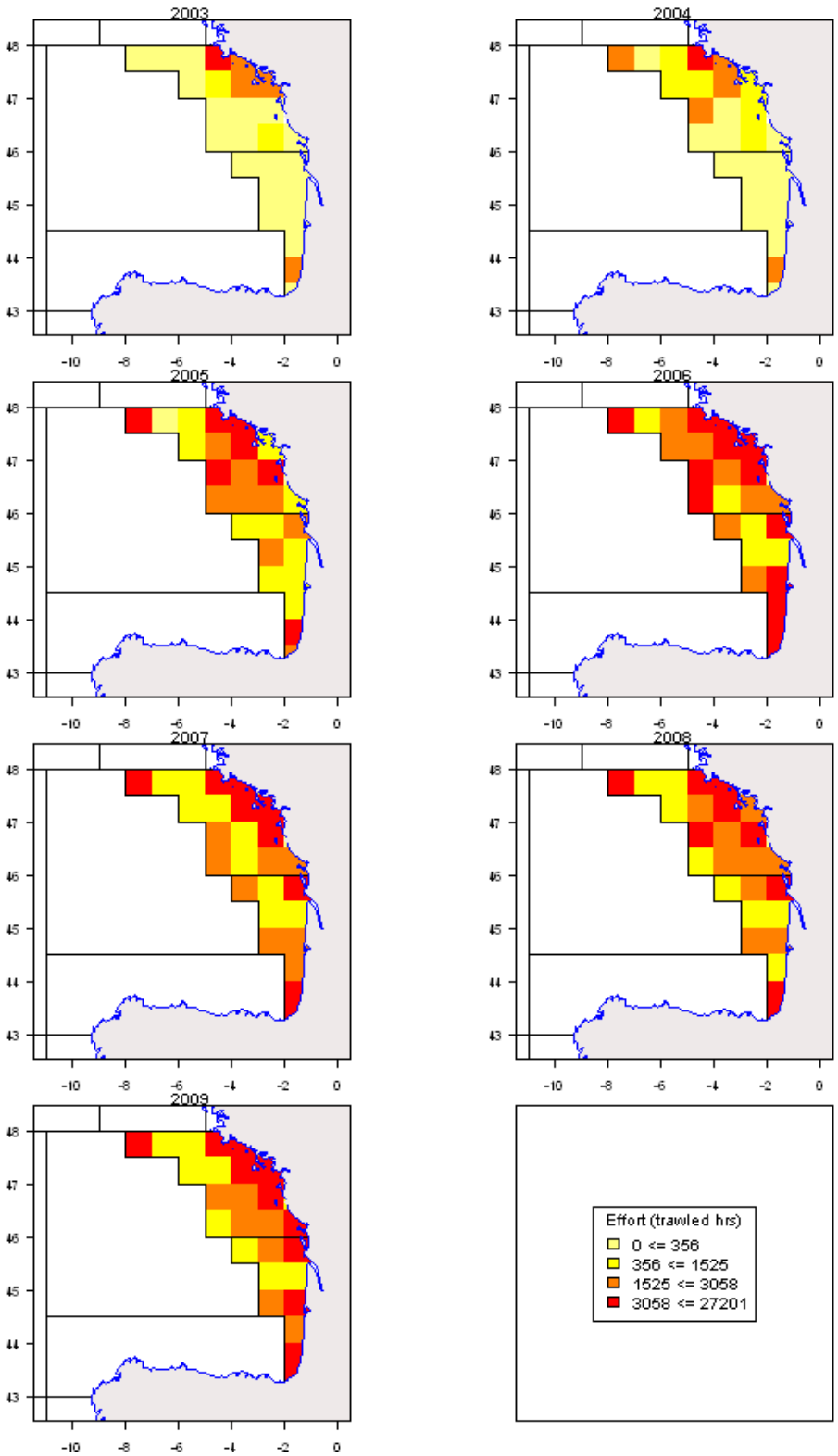


Figure 10.8.4. Bay of Biscay. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Gill nets, 2003-2009.

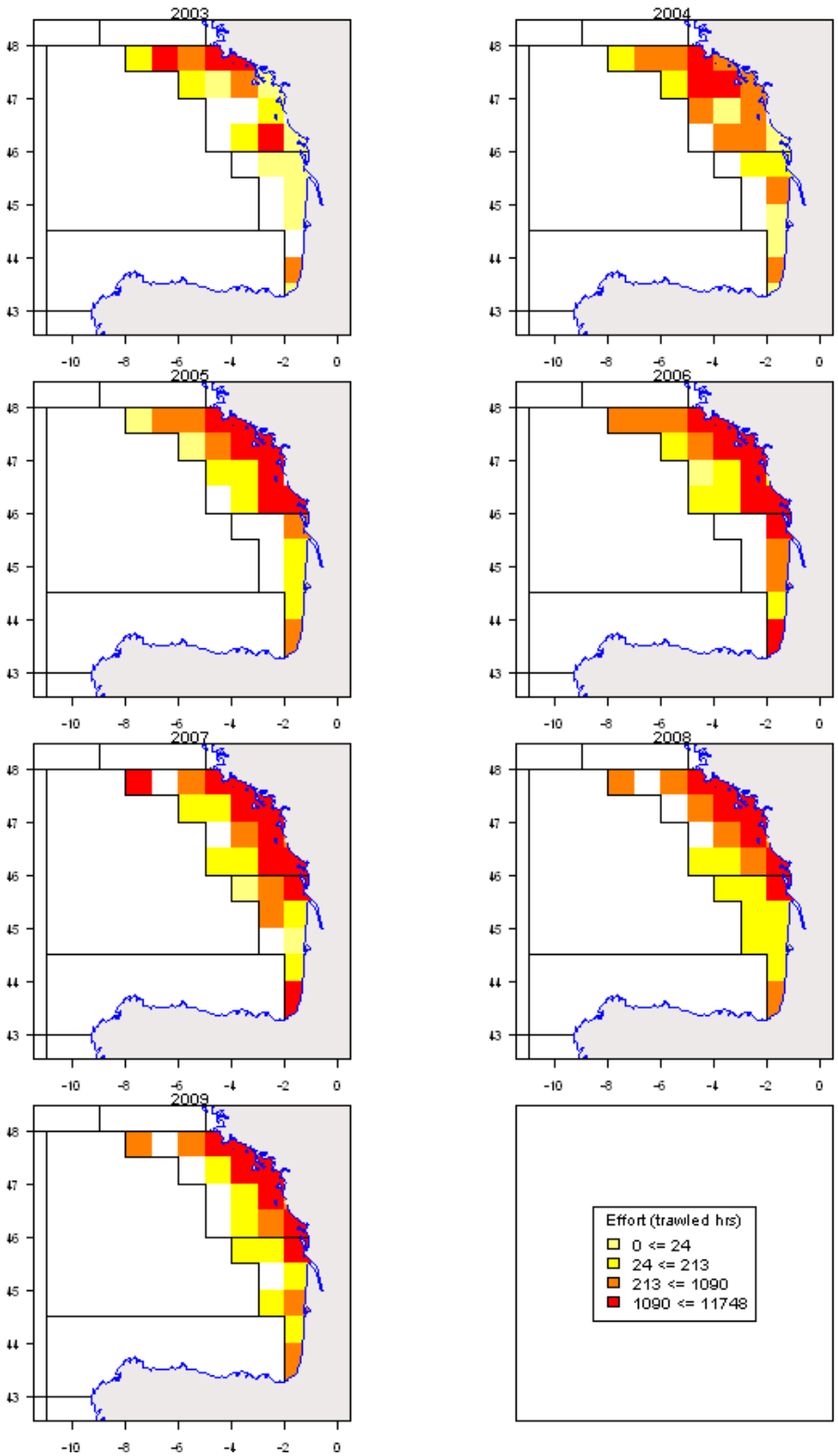


Figure 10.8.5. Bay of Biscay. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Longlines, 2003-2009.

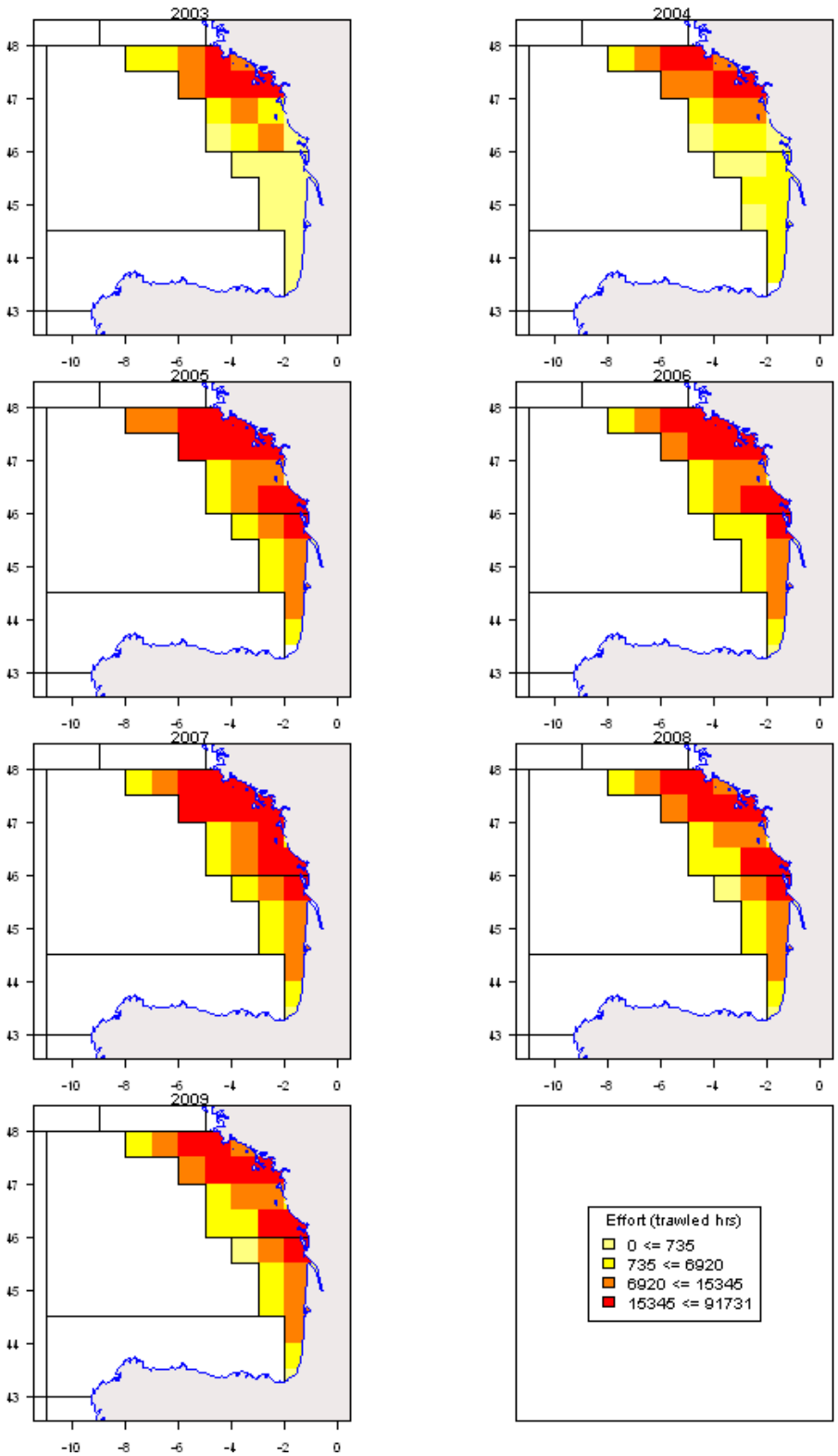


Figure 10.8.6. Bay of Biscay. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Otter Trawl, 2003-2009.

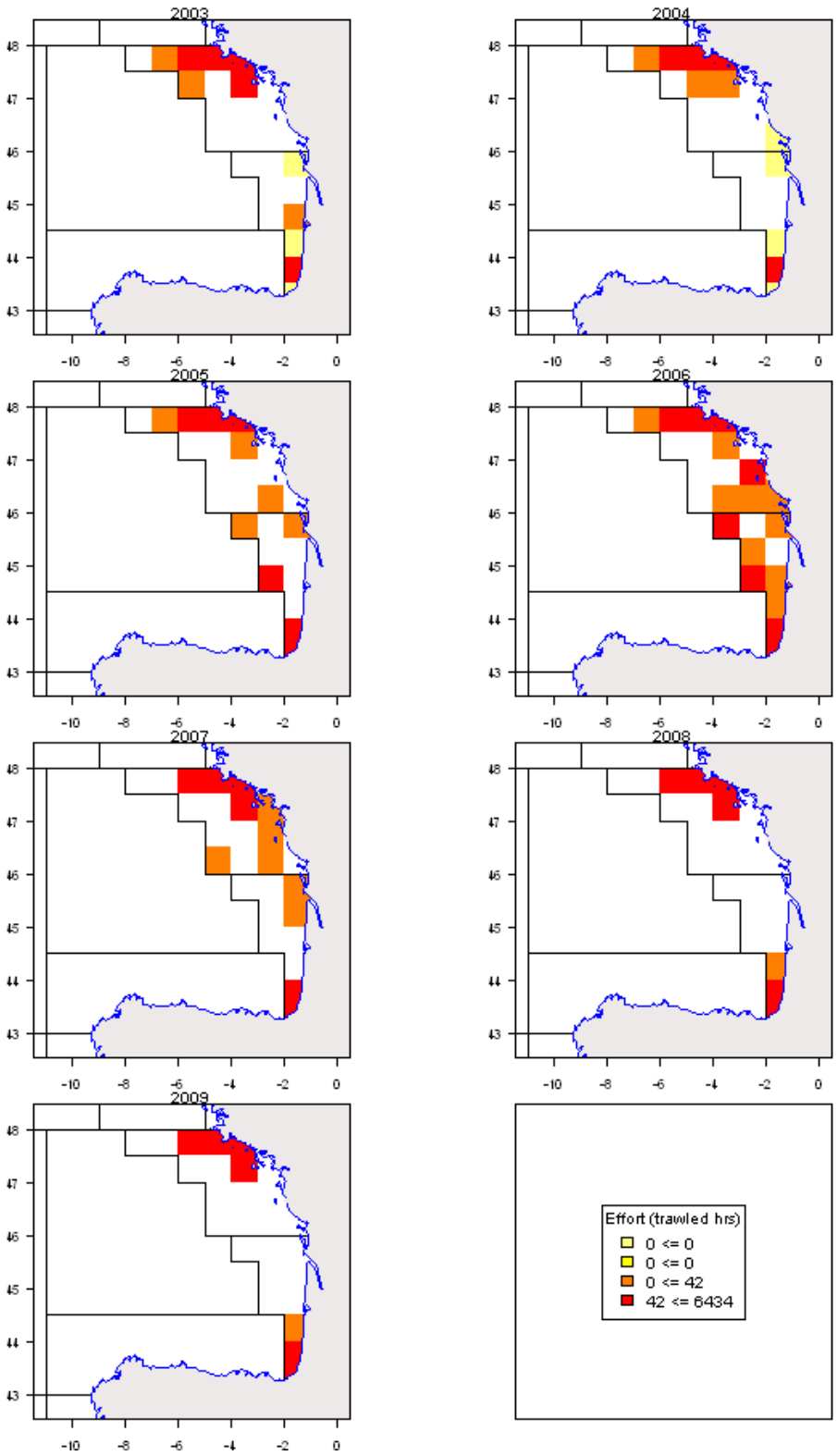


Figure10.8.7. Bay of Biscay. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Pelagic Seine, 2003-2009.

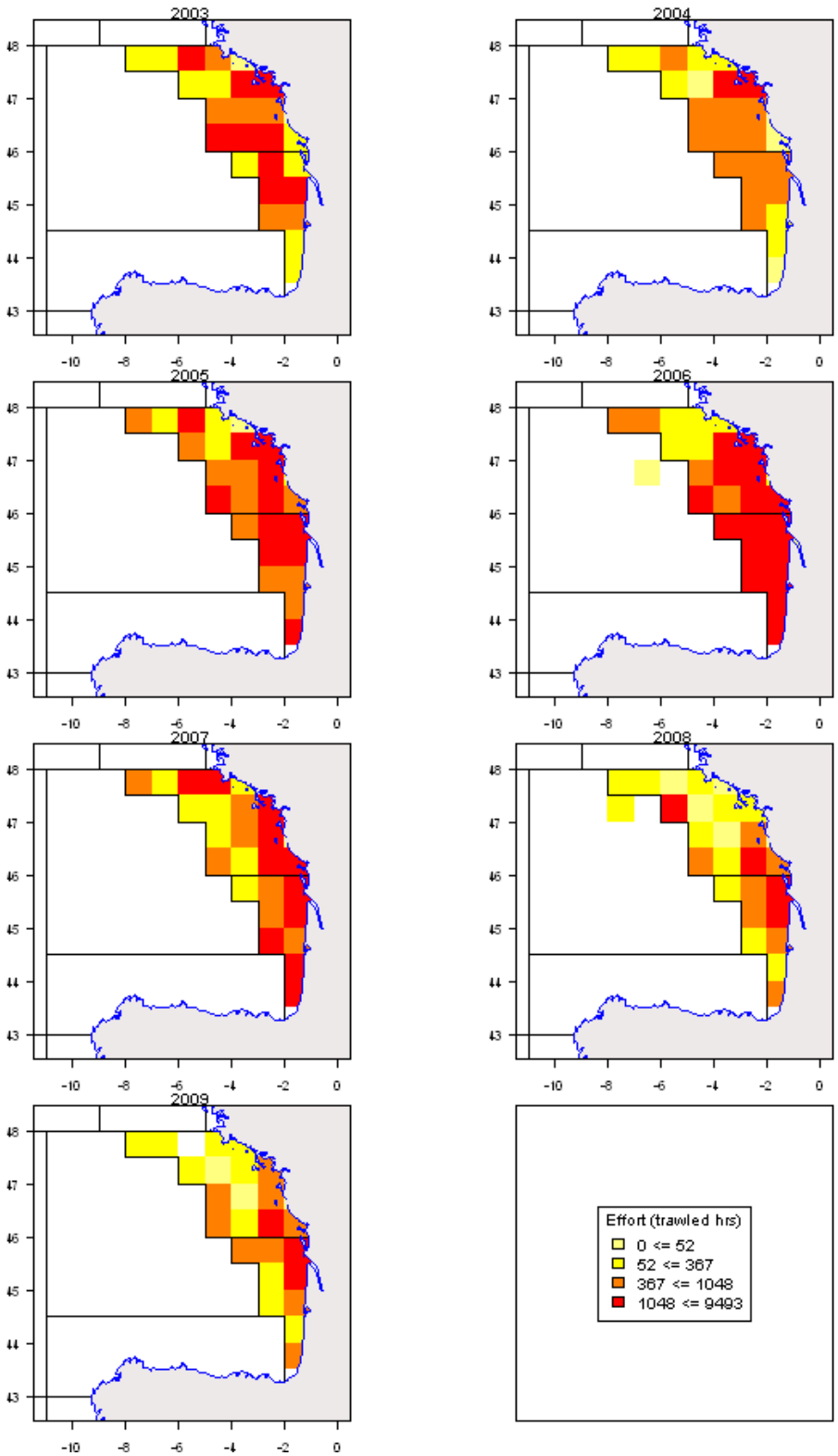


Figure 10.8.8. Bay of Biscay. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Pelagic Trawl, 2003-2009.

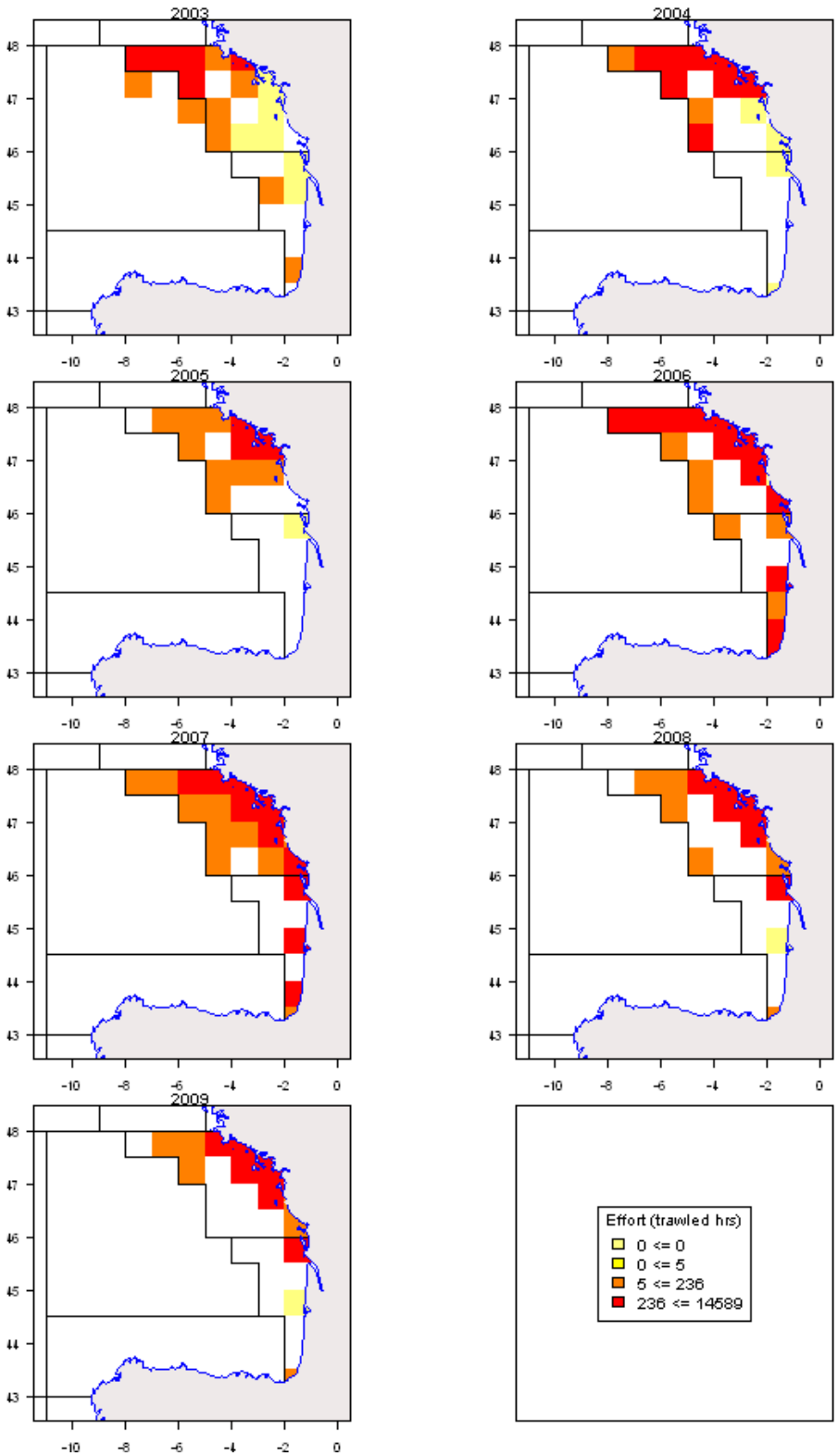


Figure 10.8.9. Bay of Biscay. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Pots, 2003-2009.

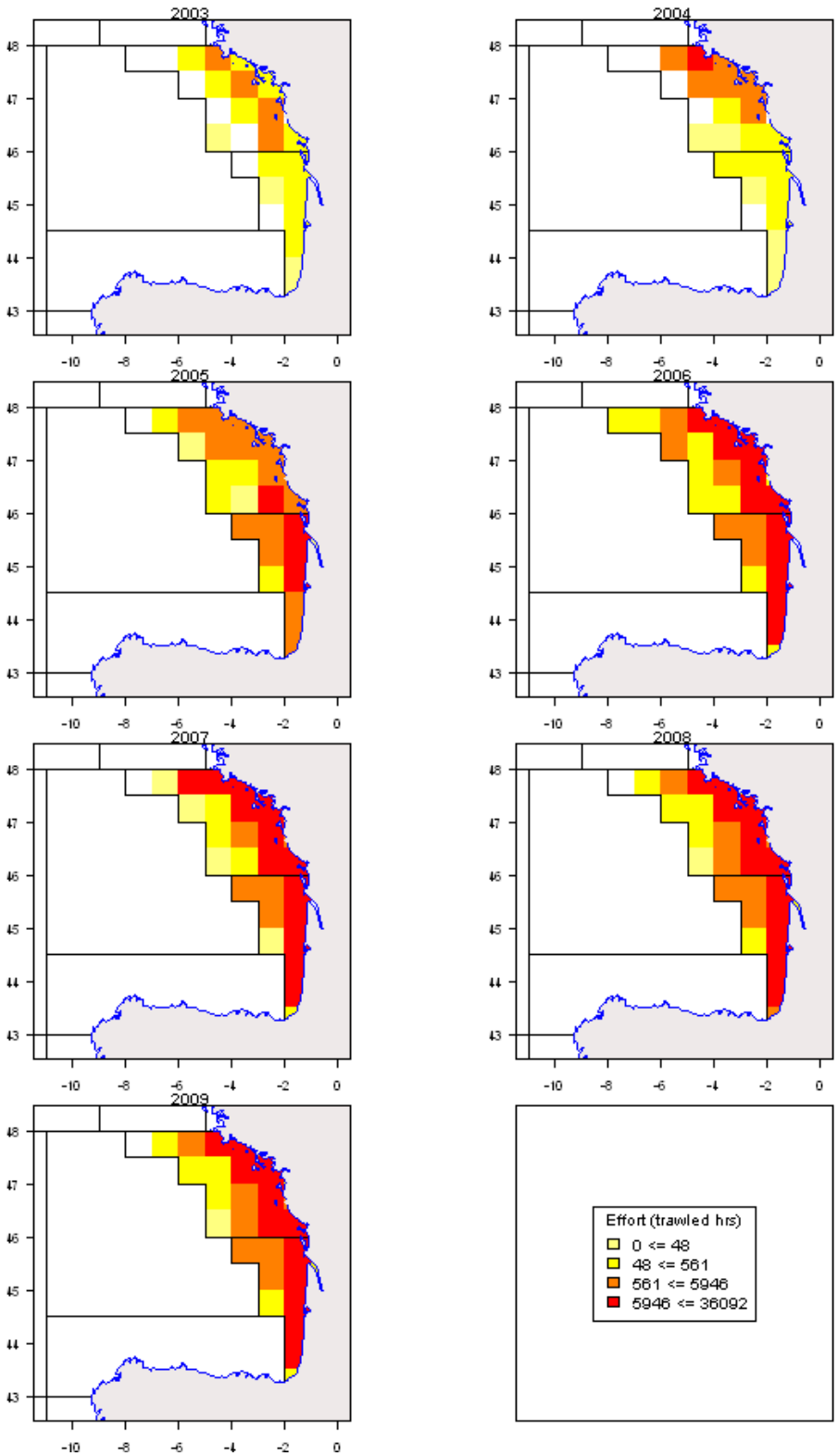


Figure 10.8.10. Bay of Biscay. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for Trammel Nets, 2003-2009.

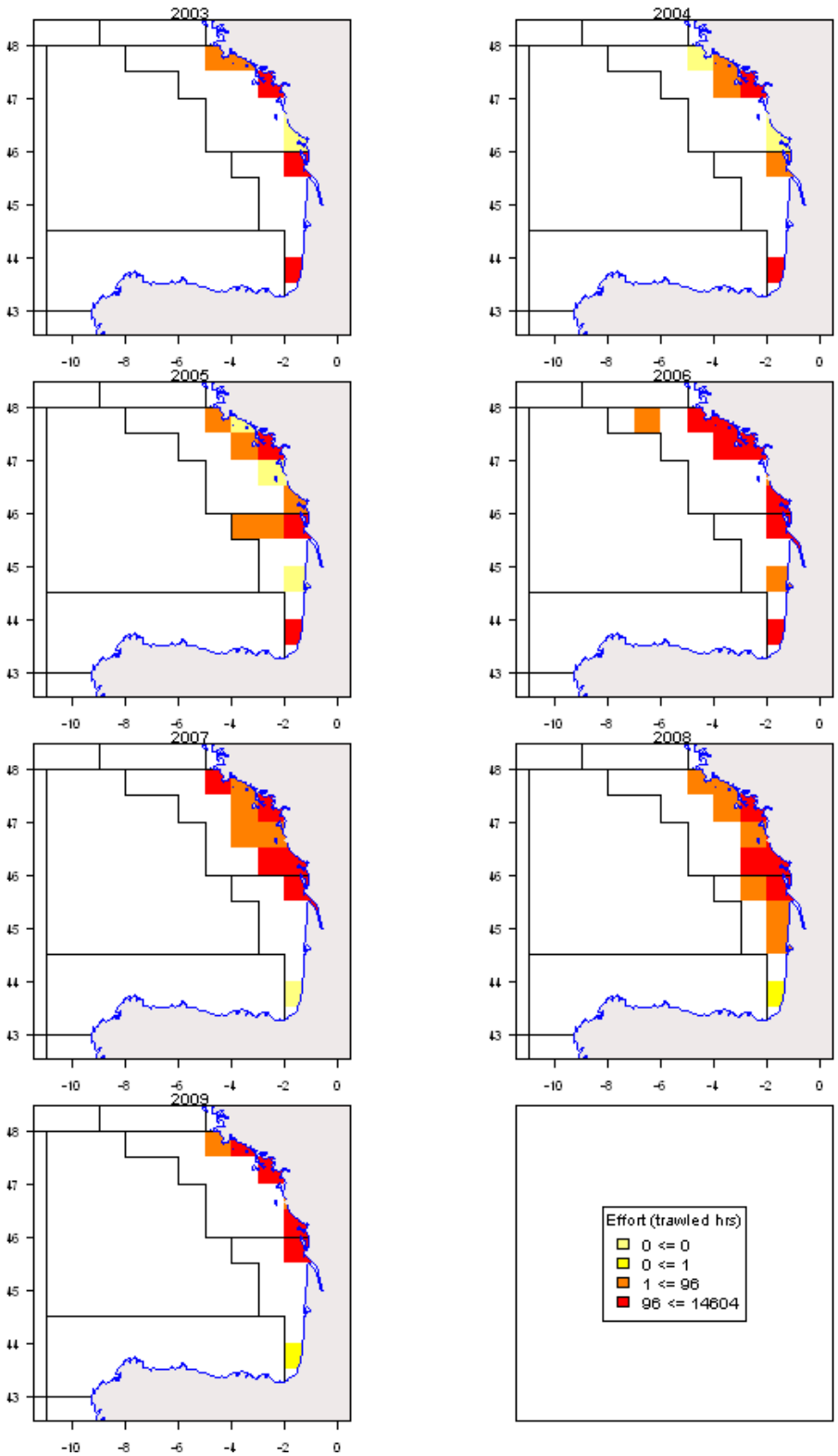


Figure 10.8.11. Bay of Biscay. Spatial distribution of effective fishing effort (trawled hours) by ICES statistical rectangle for None (“none-none”), 2003-2009.

11. RELATIONSHIP BETWEEN FISHING MORTALITY AND FISHING EFFORT

11.1. Introduction

The terms of reference for this meeting of the SGMOS subgroup included a request for an assessment, by region, of the correlation between fishing mortality rates and the fishing effort deployed.

SGMOS was also asked to explain or describe any good correlation between fishing mortality rates and fishing effort and in cases where the correlation between the nominal fishing effort and the fishing mortality rates was weak, the SGMOS was asked to describe whether this was due to a wrong descriptor (i.e. wrong descriptor for fishing capacity) or due to other factors.

Preliminary discussions identified a number of issues concerning data sources and methods of analysis. These are discussed in the sections below. In view of the scope for a variety of approaches, the number of questions arising and the limited time available for a substantive evaluation, it was decided that attempts to provide definitive information on the correlation between effort and F was ill advised. Instead this chapter outlines some of the initial discussion and presents a few examples of findings.

11.2. General issues concerning the investigation of relationships between F and effort

11.2.1. Sources of information

Collation of and presentation of the effort data required for this analysis is carried out by SGMOS STECF and provides for various levels of aggregation in particular by the various gear categories. Fishing mortalities (Fs) ,however, are not generated by STECF and the group is reliant on output from the routine ICES assessment working groups. Typically these are not disaggregated except, in some cases, to show discard and human consumption rates.

A number of potential problems are associated with using different sources of information.and generating disaggregated estimates of F for use with the available effort data. Over the course of the groups work it has been regularly observed that the catch data compiled by STECF differs from that compiled by ICES – sometimes the the ICES data exceeds the STECF data, sometimes the reverse is true. This could imply that the effort data to deliver the STECF catch is not strictly equivalent to that required to generate the ICES F value. Typically the latter are mean F values across a range of ages and apply to all removals – including an estimate of unallocated landings. One possible way around this is to estimate an STECF partial F using the ratio of the STECF to the ICES catches

When comparing this partial F with STECF effort data it is implicitly assumed that effort data show the same bias as STECF catch estimates compared to ICES catch estimates. This may not hold true. If effort data do not show the same bias than the comparison between the corrected STECF partial F and STECF effort data is misleading. In particular, if there is a trend over time between the ratio of catches covered by STECF and ICES catch estimates, the correlation between STECF partial F and effort can be considerably biased.

The problems become more acute when considering different gear types (associated with the management plan implementation) for which effort exists but partial Fs have to be derived. The correlations computed will be affected by the degree of disaggregation of the data. At a fairly aggregated level, mixtures of distinct fishing practices may generate spurious correlations and/or conceal any correlation existent on the disaggregated information. Moving to analysis of more disaggregated effort data and partial Fs based on catches of these gears it becomes difficult to take account of the selectivity pattern of different gears. Furthermore, differences between years caused by changing population structure of the stock (e.g. strong year classes) may confound the analysis. Fs at age are available from the ICES stock assessments. With sufficient information at age from sufficient countries, STECF catch at age data could be used to consider partial Fs at age by gear type.

11.2.2. Assessment Quality

Correlations of F and effort will depend on the quality of fishing mortality and effort estimates. If the assessment shows retrospective trends, the correlation obtained may not be realistic as it is estimated using fishing mortality results for the most recent years, i.e. those most impacted by retrospective patterns. In the case of, this effort must be estimated in a way that reflects as much as possible the fishing activity at the level of data aggregation. One problem already identified is whether the computation of fishing days is made in periods of 24 hours or calendar days; - the first is expected to better reflect fishing activity. As a general rule, data compiled with distinct ways of computing days-at-sea should not be aggregated. Another factor that may have a large impact on the analysis is the usage of effort units such as Kw days. which may not be suitable for some gears (static gears in particular) .In the case of gill nets it may be more important to take account of the size of nets or in longlines, the number of hooks.

For some ICES stock assessments commercial data has been excluded in recent years because of concerns over data bias. Historical series of stock status and mortality are calibrated using commercial data for the earlier part of the time series but only research vessel survey abundance indices for the most recent years. Such assessments output their own estimate for the 'removals' at age from the stock. It has been found that for various stocks the assessment removals are much higher than the totals provided to ICES leading to the specification in some cases of unaccounted catches. Therefore, even if the catch totals held by SGMOS are similar to data provided to ICES, they can be a small fraction of the totals relating to stock fishing mortality. This situation exists for North Sea, VIa and VIIa cod stocks.

A general problem with F vs. effort analyses arises when F is affected by developments of the stock. Sometimes when stocks increase rapidly it has been observed that F can go down while catches stay on the same level and vice versa. This may lead to spurious correlations showing a relationship between F and effort although the real reason for an adjustment in F is a change in the size of the stock.

11.2.3. Significance of any relationships

The group agreed that undue emphasis should not be placed on any relationships which turned out not to be significant. Cursory examination of plots of F against effort frequently suggested a positive or negative relationship but with very widely scattered data points. Often, these were subsequently shown to be non-significant correlations. Some time was devoted to discussing appropriate methods of analysis although a definitive approach was not agreed and it was suggested that since the data were generally derived from time series, tests for autocorrelation etc might also be prudent.

11.2.4. Suggested approach for future examination of F vs effort relationships

To allow understanding of the suitability of using the data held by STECF in each situation the sub-group summarised a basic 'recipe' of data comparisons in addition to comparisons of partial F values to nominal effort totals held by STECF.

- Compare total landings for species and area in STECF data to total landings for species used by ICES in stock assessment – line graph showing STECF values as % of ICES values.
- If possible compare total discards for species and area in STECF data to total discards for species used by ICES in stock assessment – line graph showing STECF values as % of ICES values.
- If stock assessment mortality based on total removals (landings {+ discards} + unaccounted removals) – compare total catch {landings} from STECF data with total removals estimated by ICES stock assessment - line graph showing STECF values as % of ICES values.
- Line graph of
    - Assessment 'F' against time.
    - Partial Fs of main regulated gears fishing that area and species
    - Partial F of all catch {landings} recorded by STECF.
    - Partial F of removals unaccounted for by STECF data.

- Scatter plot of partial F of removals accounted for by STECF data fishing that area and species against total effort recorded by STECF.
- Scatter plot of partial F of regulated gears and unregulated gear fishing that area and species against STECF data on effort by those gears
- Statistical analysis to ascertain whether correlations are significant
- Presentation and discussion only of significant results

11.3. Initial results

Exploratory analysis was performed using F values and effort from the following areas, North Sea, Irish Sea, Western Channel, Iberian peninsula and Baltic Sea (results from the Baltic Sea also appear in the separate report for that area).

Where possible elements from the basic approach listed above are included in the preliminary presentations below. Since time was restrictive this presentation is not exhaustive and will be worked on prior to the next meetings in 2011.

Substantive conclusions should not be drawn from these analyses at this stage.

11.3.1. North Sea

Catch data provided to STECF is from EU member states only. In the North Sea region stock assessments of cod and other species are conducted using catch from Norway –a non-EU state. .

Partial F was calculated as follows for North Sea cod, plaice and sole:

1. Total catch was estimated for all gears using the SGMOS data.
2. Catch was estimated for each regulated gear using the SGMOS data.
3. Mean F was obtained from the ICES assessments.
4. Partial F was estimated for each species according to: (catch at metier/totalcatch) x F.

This value of partial F (*pf*) was then plotted and regressed against total fishing effort for each gear. The raw data for cod, plaice and sole are plotted in Figs 11.3.1.1- 4.

Subsequently the following nested models were fitted to the data for each species:

1. *pf ~ 1*
2. *pf ~ fishing effort*
3. *pf ~ fishing effort + gear*
4. *pf ~ fishing effort * gear*

Model 1 is the null model, model 2 tests whether fishing effort is significant overall, model 3 whether the effect of effort on *pf* depends on gear, and model 4 whether the effect of effort interacts with gear, ie. are the slopes the same ? The R-function ***step*** was then used to select the 'best' model based on AIC (The significances of each terms are shown in Tables 11.3.1.1-3). For all species model 4 was selected and the results of the model output for North Sea cod is plotted in Figure 11.3.1.2. The data suggest there is a strong positive relationship in most cases between partial F and fishing effort.

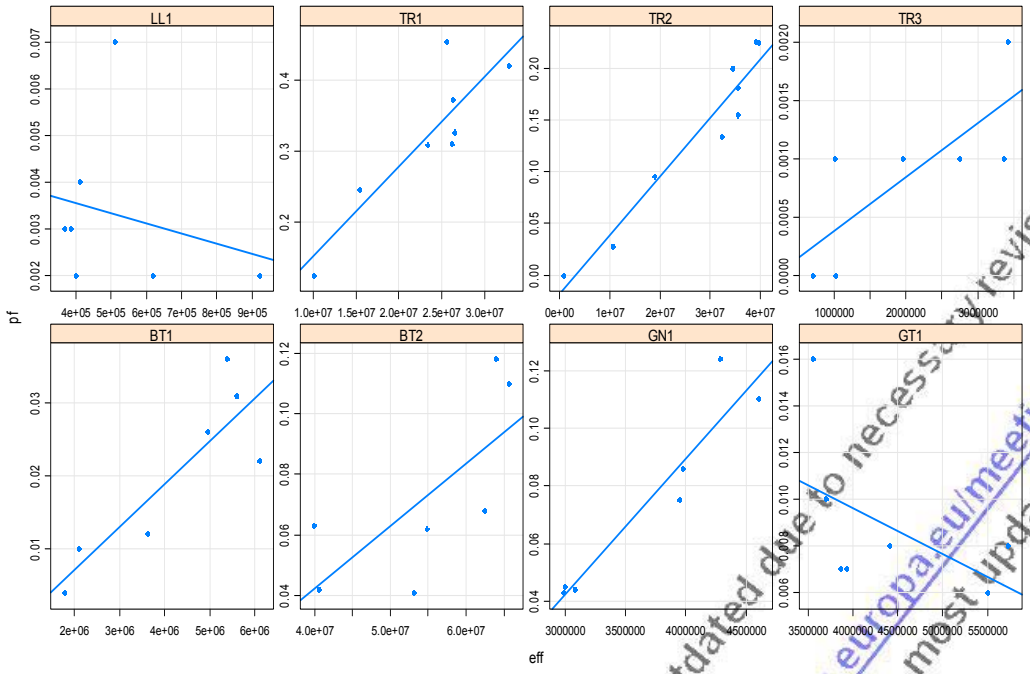


Figure 11.3.1.1 North Sea Cod: fishing effort (kwh) versus partial F.

Table 11.3.1.1 Model ANOVA summary for COD (IIa-3b).

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
eff	1	0.17017254	0.170172542	302.820180	2.908394e-20
gear	7	0.51825379	0.074036256	131.746708	1.423518e-25
eff:gear	7	0.03180186	0.004543123	8.084437	4.171495e-06
Residuals	40	0.02247836	0.000561959	NA	NA

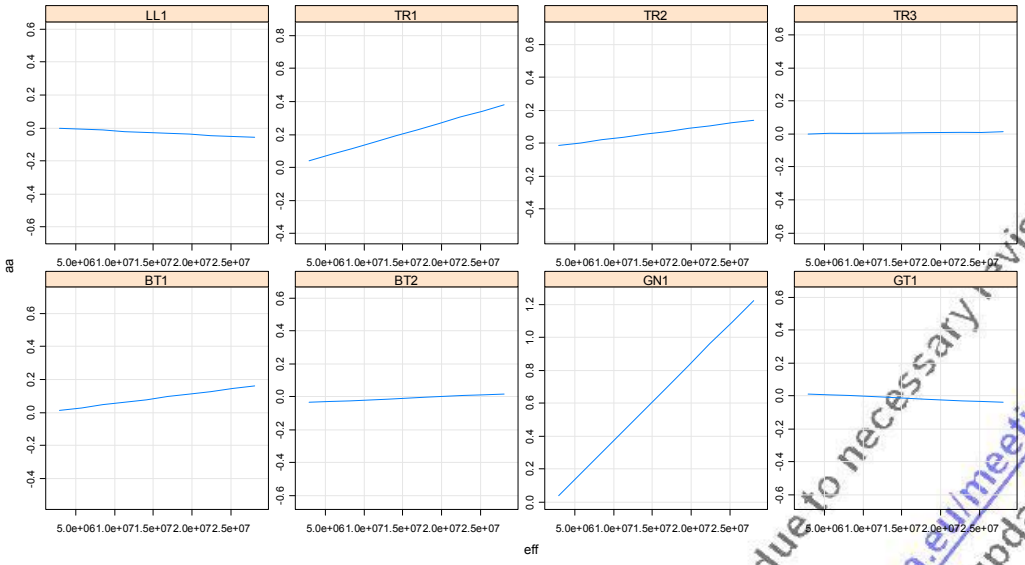


Figure 11.3.1.2 North Sea cod: 'Best model' summarising the relationship between partial F, effort (kwh) and gear type.

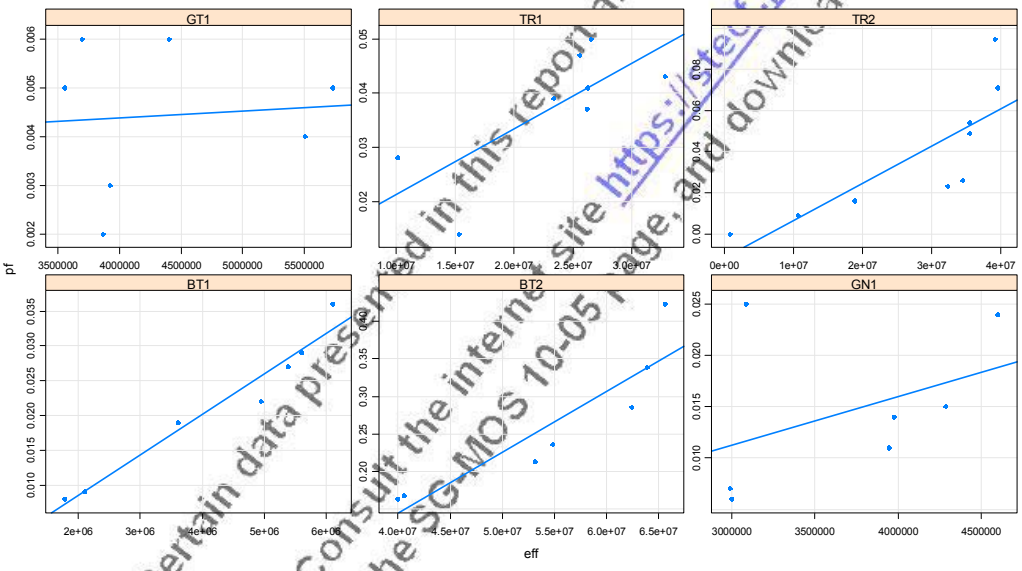


Figure 11.3.1.3. North Sea Plaice: fishing effort versus partial F.

Table 11.3.1.2. Model ANOVA summary for Plaice (IIa-3b).

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
eff	1	0.28958609	0.2895860942	706.011237	2.097851e-22
gear	5	0.07731239	0.0154624785	37.697541	4.657742e-12
eff:gear	5	0.01279626	0.0025592512	6.239457	4.445341e-04
Residuals	30	0.01230516	0.0004101721	NA	NA

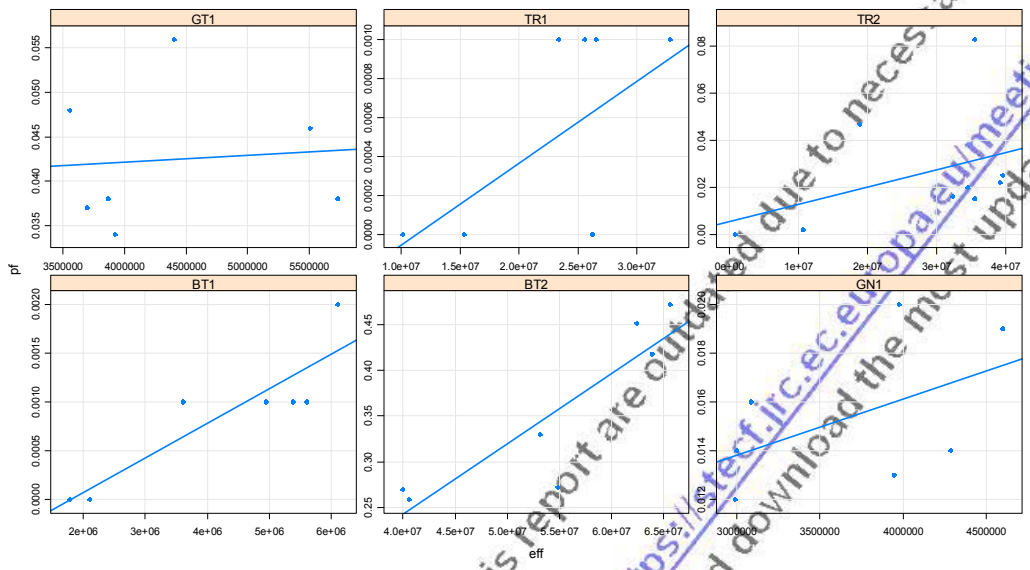


Figure 11.3.1.4. North Sea sole: fishing effort versus partial F.

Table 11.3.1.3. Model ANOVA summary for SOLE (IIa 3b)

	Df	Sum Sq	Mean Sq	F value	Pr(>F)
eff	1	0.43539035	0.4353903509	891.613546	7.162714e-24
gear	5	0.24838858	0.0496777154	101.732443	6.992859e-18
eff:gear	5	0.02086203	0.0041724056	8.544455	4.036778e-05
Residuals	30	0.01464952	0.0004883173	NA	NA

11.3.2. Irish Sea

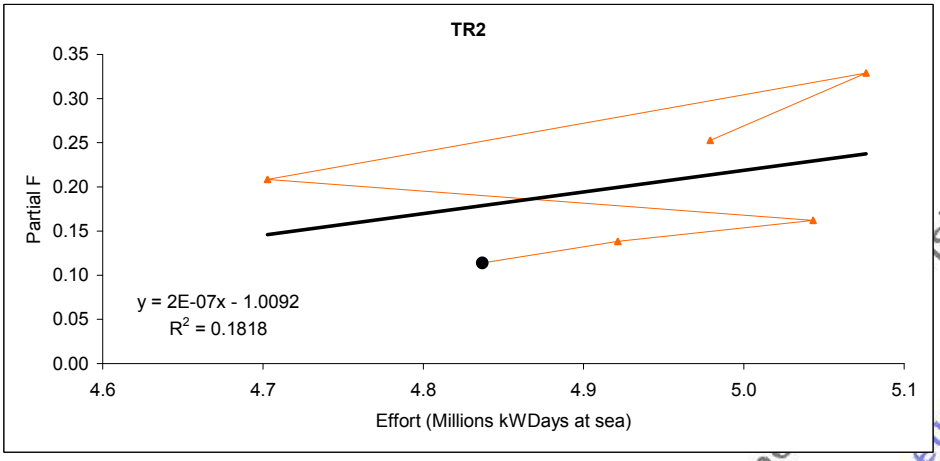
A preliminary analysis of F vs effort was carried for three prominent gears in the Irish Sea, TR2, TR1 and BT2. Establishing the most appropriate values for fishing mortality was difficult owing to differences in the reported landings and the values used as the basis for estimating F.

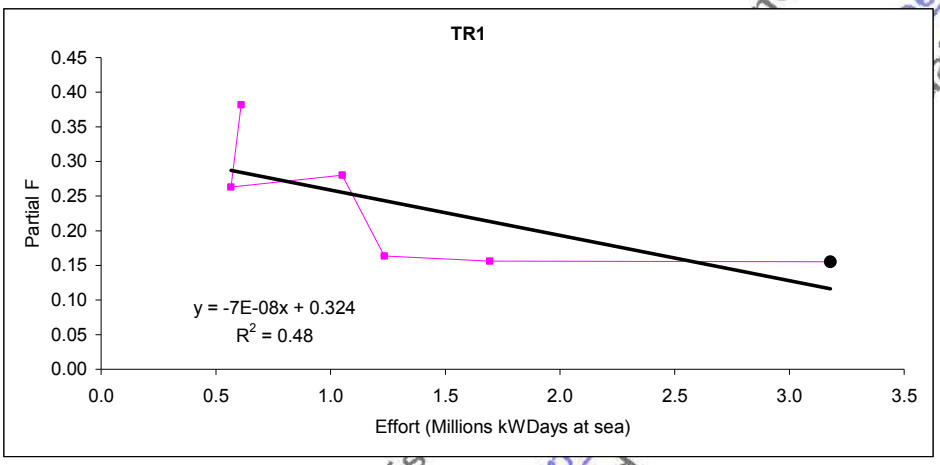
Landings totals for cod in the Irish Sea (area VIIa) provided to SGMOS are higher than the landings totals supplied to ICES. In the ICES working group the landings totals are adjusted for mis-reporting from other areas into ICES division VIIa. This is not done with the SGMOS data. Overall F from the ICES assessment is based

on an estimate of total removals which is considerably higher than the landings reported to either of the two working groups

Two approaches were examined, one involving plots of partial F adjusted downward to reflect the difference in the landings data available to STECF compared to that used in the assessment (Figure 11.3.2.1) and one without such a correction (Figure 11.3.2.2). In these plots the data series is shown as a linked set of scatter points with the starting year shown as a heavy point.

In the case of the trawl gears, rather different outcomes are observed depending on the choice of approach whereas BT2 appears to be unaffected by this. This will be further investigated in future meetings.





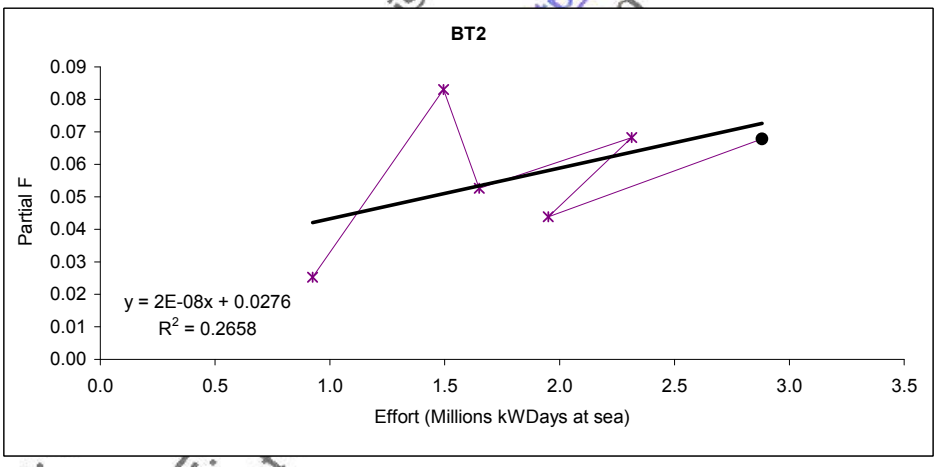
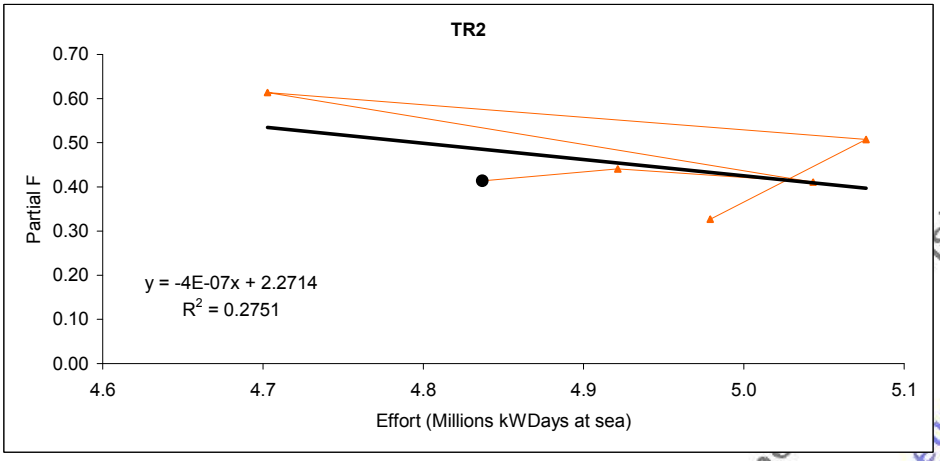
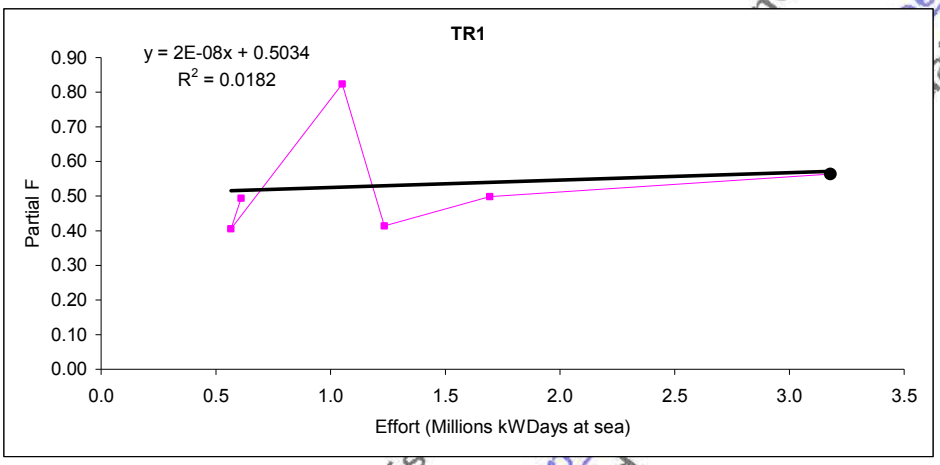


Figure 11.3.2.1





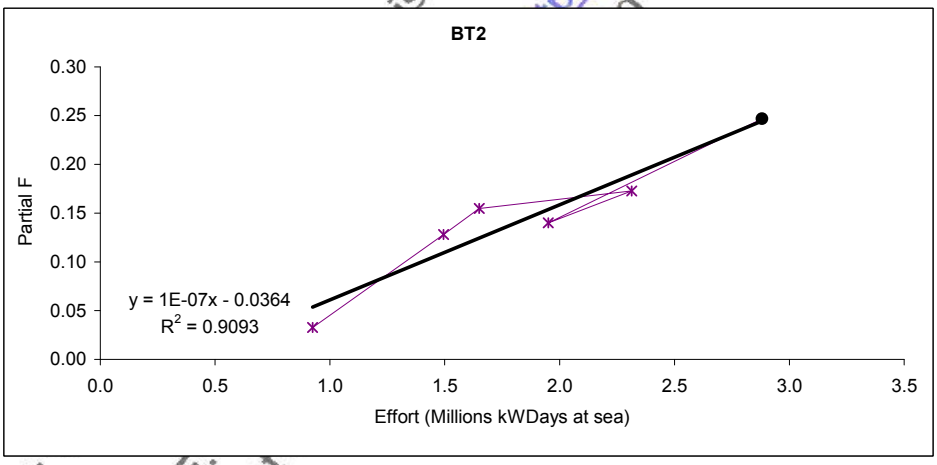


Figure 11.3.2.2

11.3.3. Western Channel sole

Since the discards for sole in ICES subdivision VIIe are assumed to be minimal, it is assumed that the total fishing mortality represents the overall mortality on the stock. It is noted that in the two first years, the reported landings to STECF only cover less than 50% of the landings used in the assessment. Therefore it was decided to investigate the difference between the correlations of the estimated STECF fishing mortality split up by gear groups (Figure 11.3.3.1) and correlations of effort versus total fishing mortality split up by gear groups (Figure 11.3.3.2).

In common with some of the other analyses, different types of relationship were apparent for some gears (in this case static gears) depending on the fishing mortality series used , whereas in others this did not seem to matter. Undue emphasis should not be placed on these observations at present and further work will be performed.

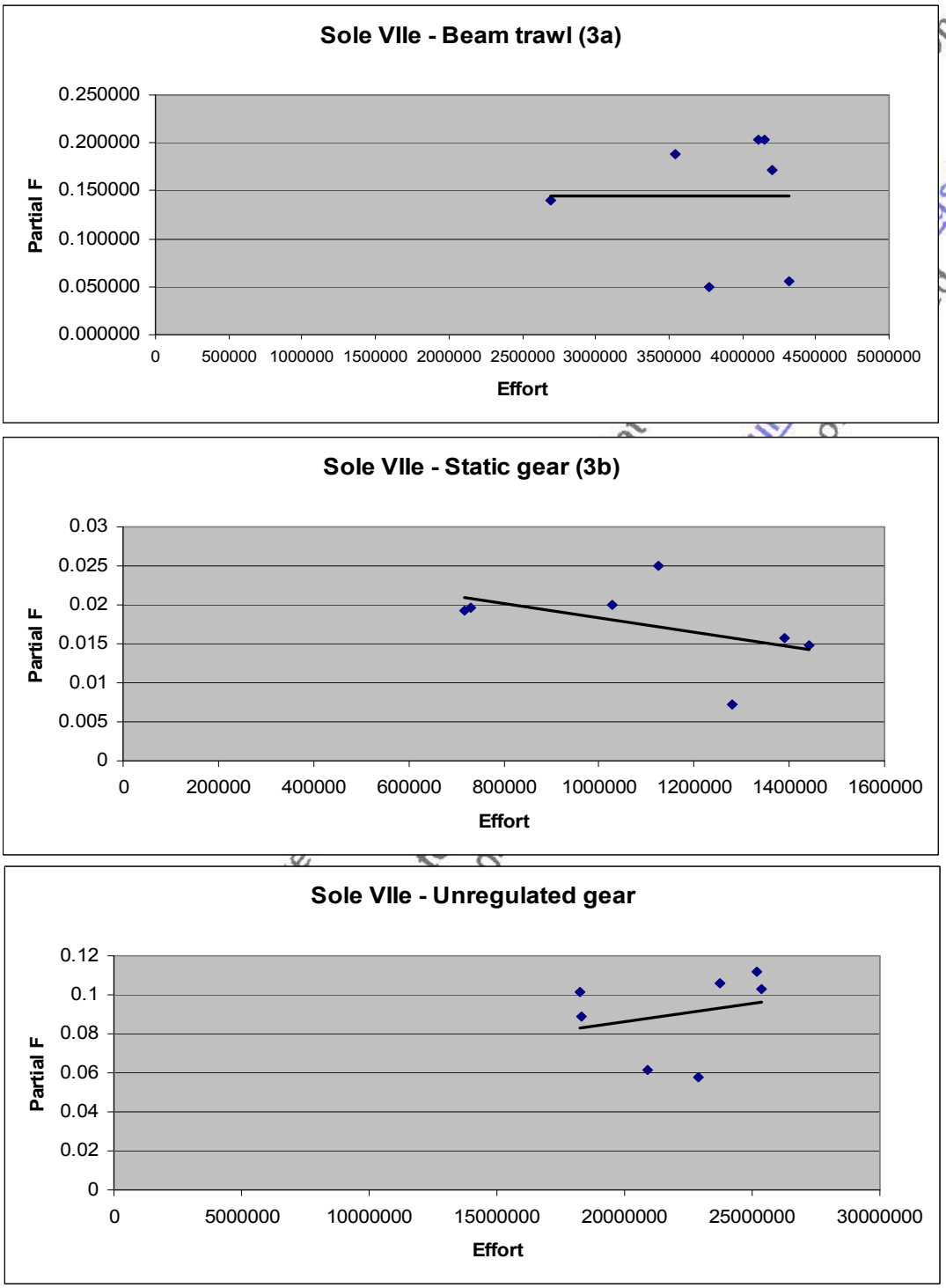
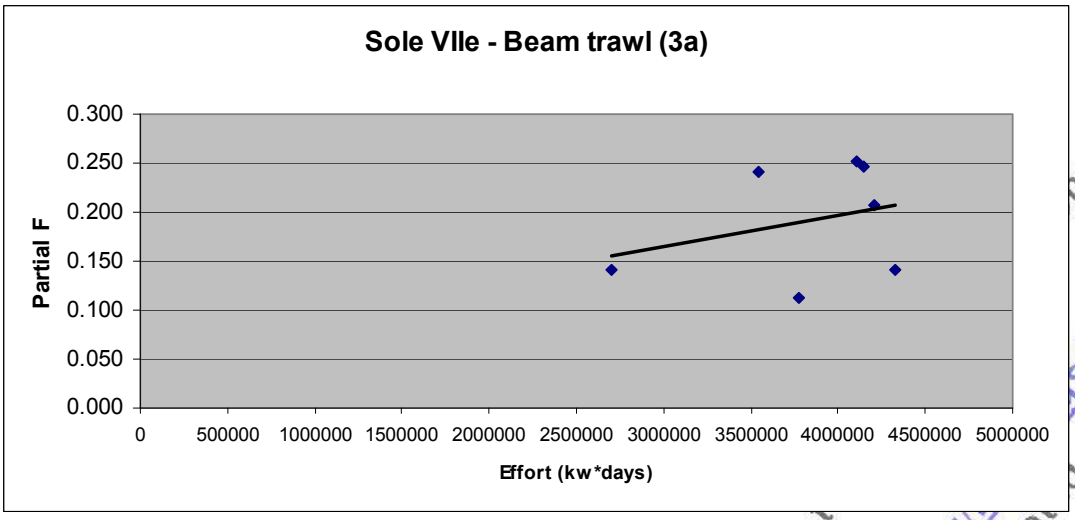
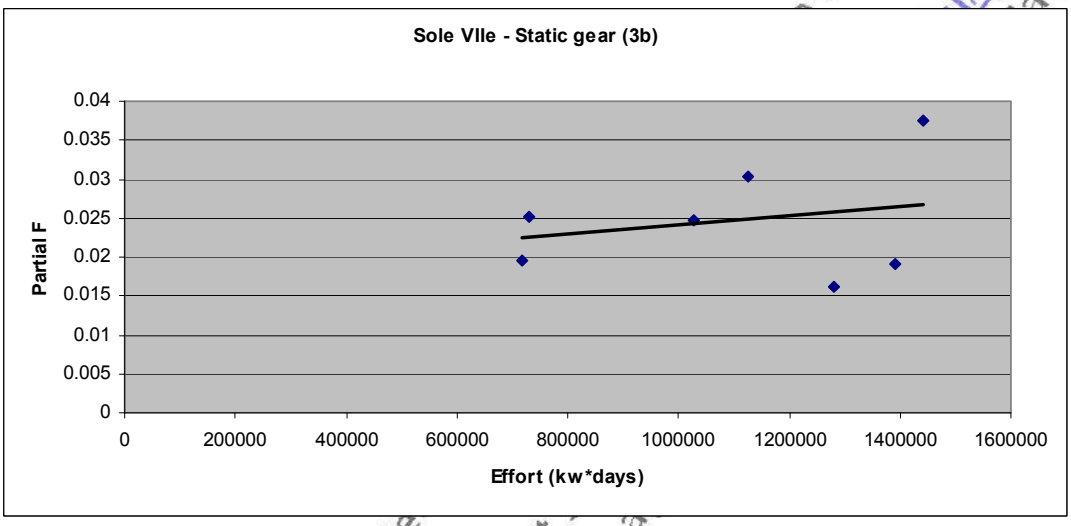


Figure 11.3.3.1





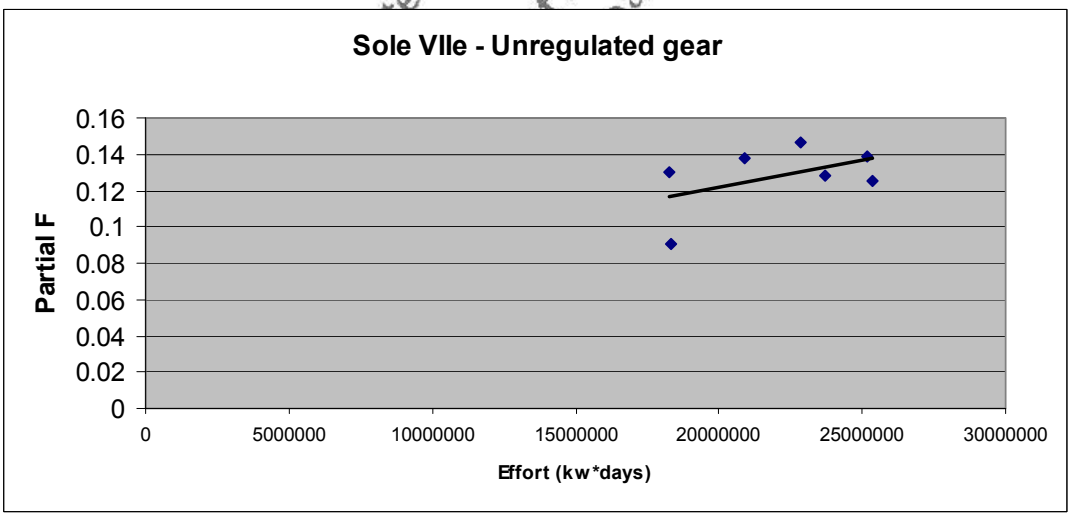


Figure 11.3.3.2

11.3.4. Iberian Peninsula

Exploratory plots of fishing mortality against fishing effort are shown for various gears used by Spain and Portugal in the fisheries occurring off of the Iberian Peninsula. Figure 11.3.4.1 shows plots for Spain and Portugal for regulated gears and associated derogations. Figures 11.3.4.2 and 11.3.4.3 show plots including non-regulated gears for Portugal and Spain respectively. The relationships shown in the scatter plots are, at this stage, not evaluated for statistical significance. At first sight the plots show considerable variability and various relationships are implied by the data. In some cases there are positive and negative relationships exhibited by the two different member states for the same gear eg the 3a trawl gear.

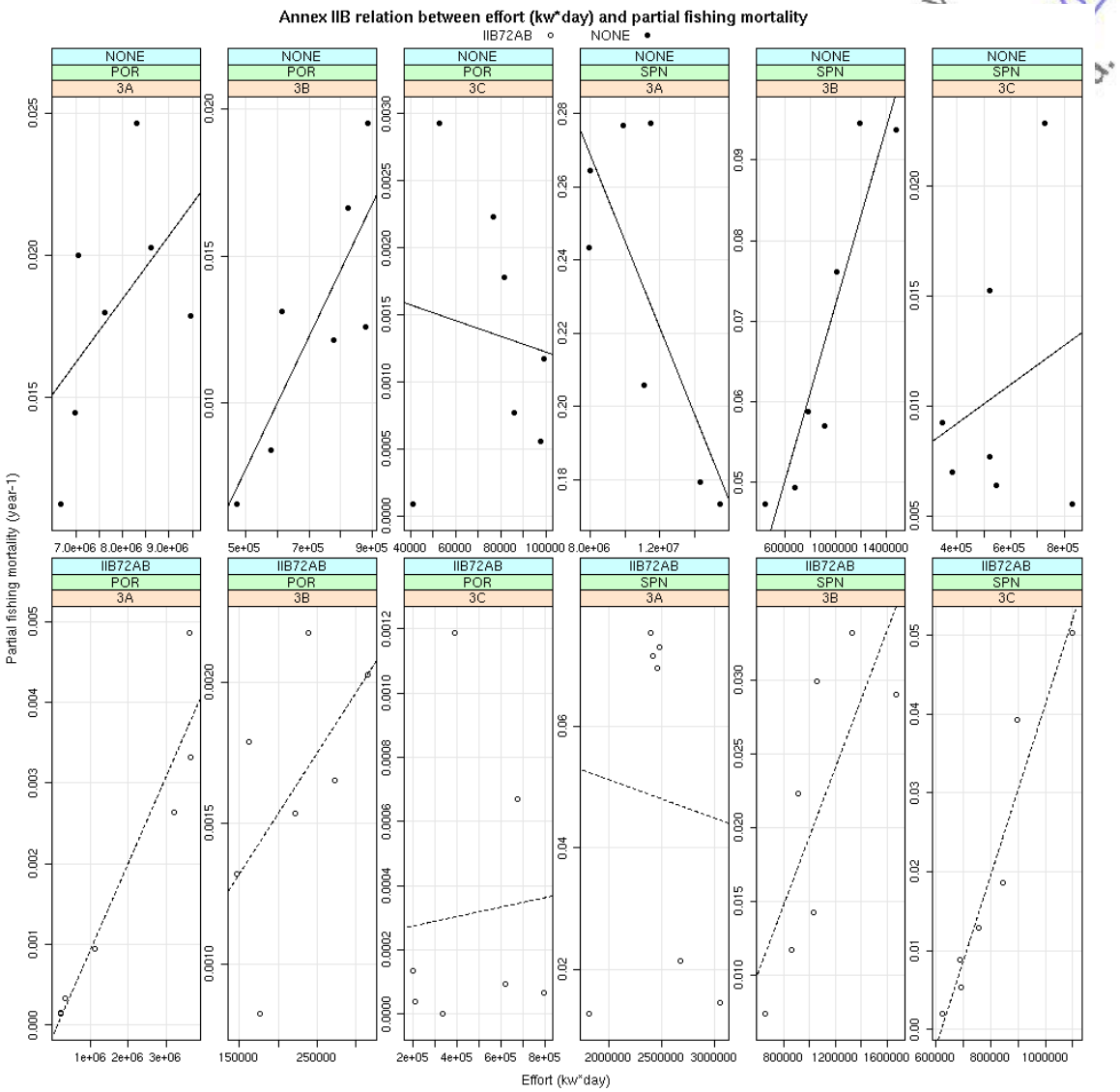


Figure 11.3.4.1 F vs effort plots for Portugal and Spain

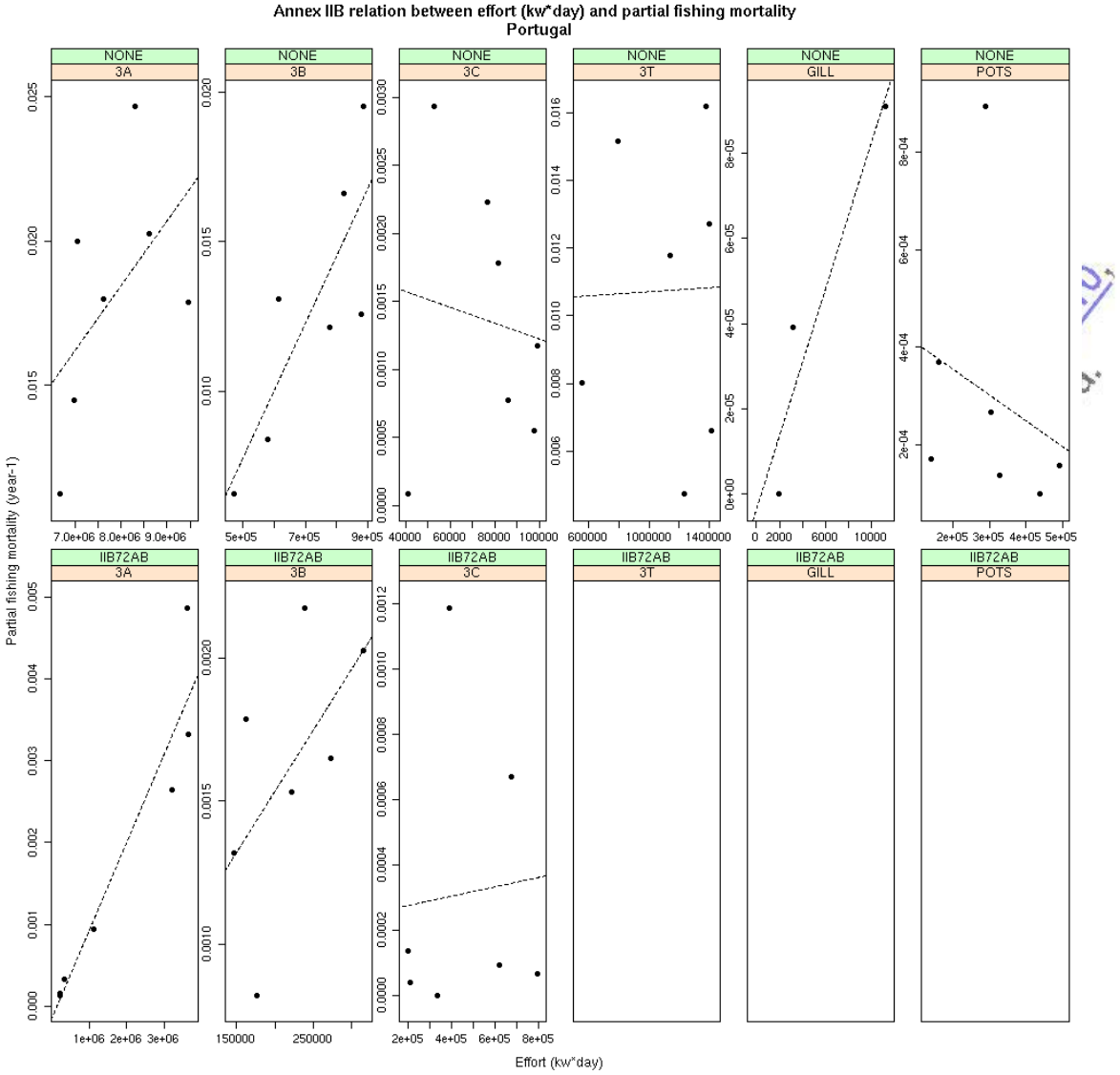


Figure 11.3.4.2 F vs effort plots for Portugal including for non -regulated gears

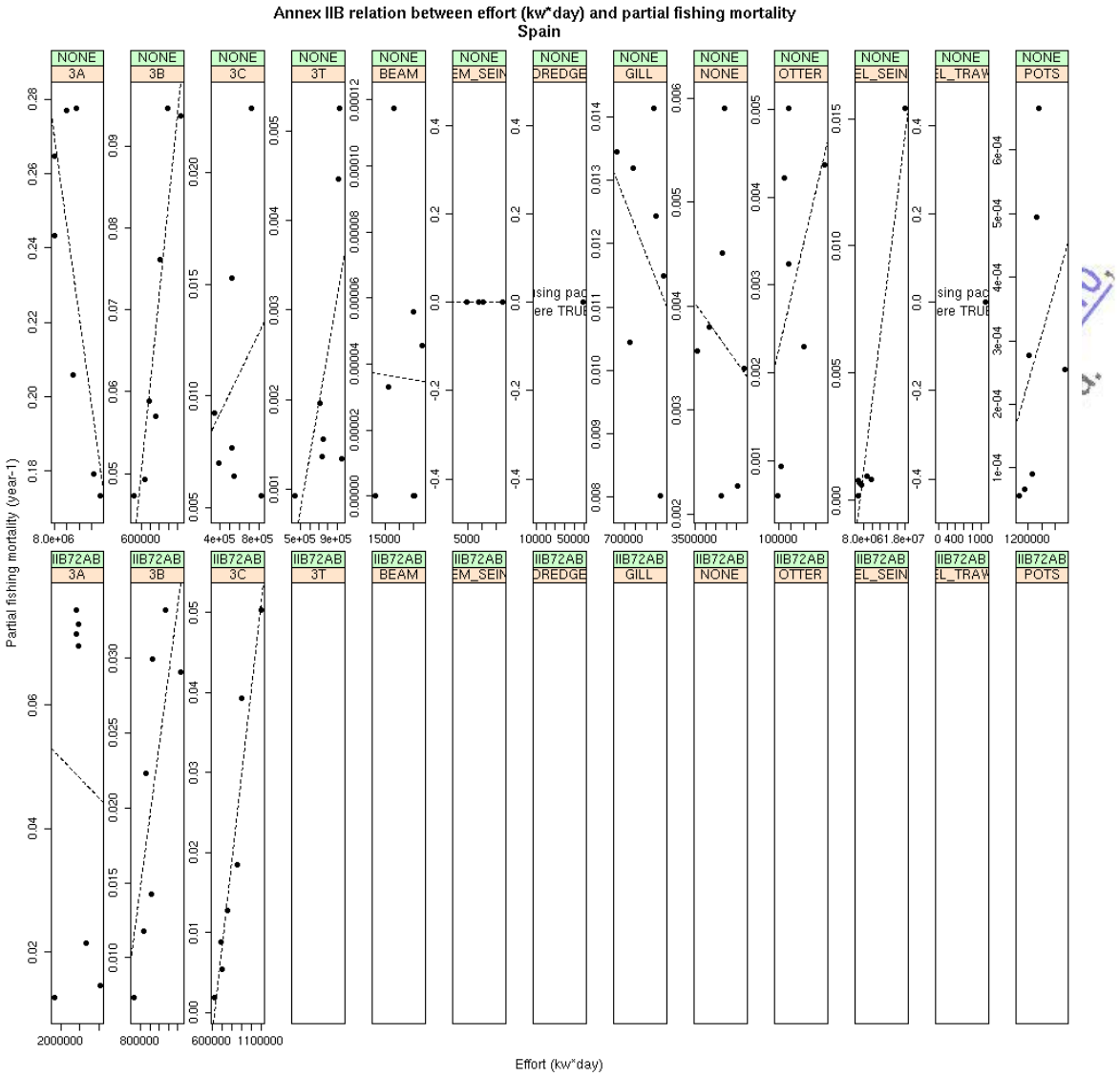


Figure 11.3.4.3 F vs effort plots for Spain including for non -regulated gears

11.3.5. Baltic F versus Effort Analysis

Catch data provided to STECF is from EU member states. In the Eastern Baltic (25-32) the assessment of cod are conducted using catch from non-EU countries and in particular Russia. The assement for Eastern Baltic cod also includes unallocated removals which are not taken into account in the STECF database. For western Baltic cod (22-24) unallocated removals are only a minor problem and only EU member states fish for western Baltic cod.However, some member states have not delivered effort and catch information for the first years of the time series for both cod stocks.

Relationships between fishing mortality and effort deployed (for all regulated gears combined) are strong for both western Baltic cod and eastern Baltic cod. Results change to some extent depending on whether the analysis is based on F from ICES assessments or an STECF partial F assuming that effort data show the same bias as STECF catch estimates (i.e. without unallocated removals) compared to ICES catch estimates (i.e. with unallocated removals). The general conclusions, however, hold true for both types of analyses. The intersection of the regression line with the x-axis would imply a zero catch of eastern Baltic cod already at around 5 million

kW*days. This is a hint that the relationship is to some extent spurious and other factors besides effort reductions are responsible for the drop in F during the last years. For example, improved productivity of the stock and the TAC constraint of +/- 15% in the cod management plan contributed. Therefore interpretation of these results should be carried out cautiously (Figure 11.3.5.1).

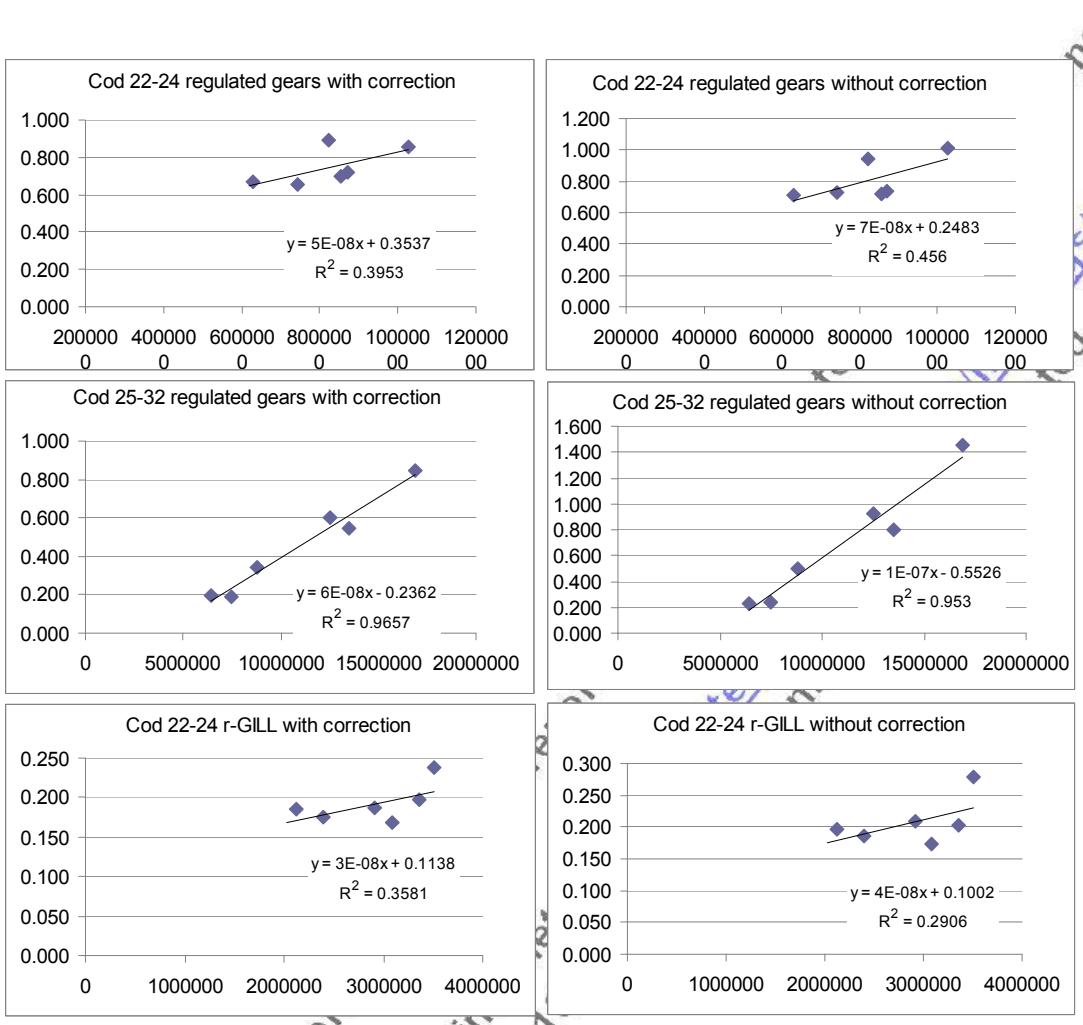


Figure 11.3.5.1. Results of F (vertical axis) versus effort analysis. Note that not only effort reductions are responsible for the drop in F during the last years. An improved productivity of the stock and the TAC constraint of +/- 15% in the cod management plan could also have contributed. Interpretation of these results should be carried out cautiously!

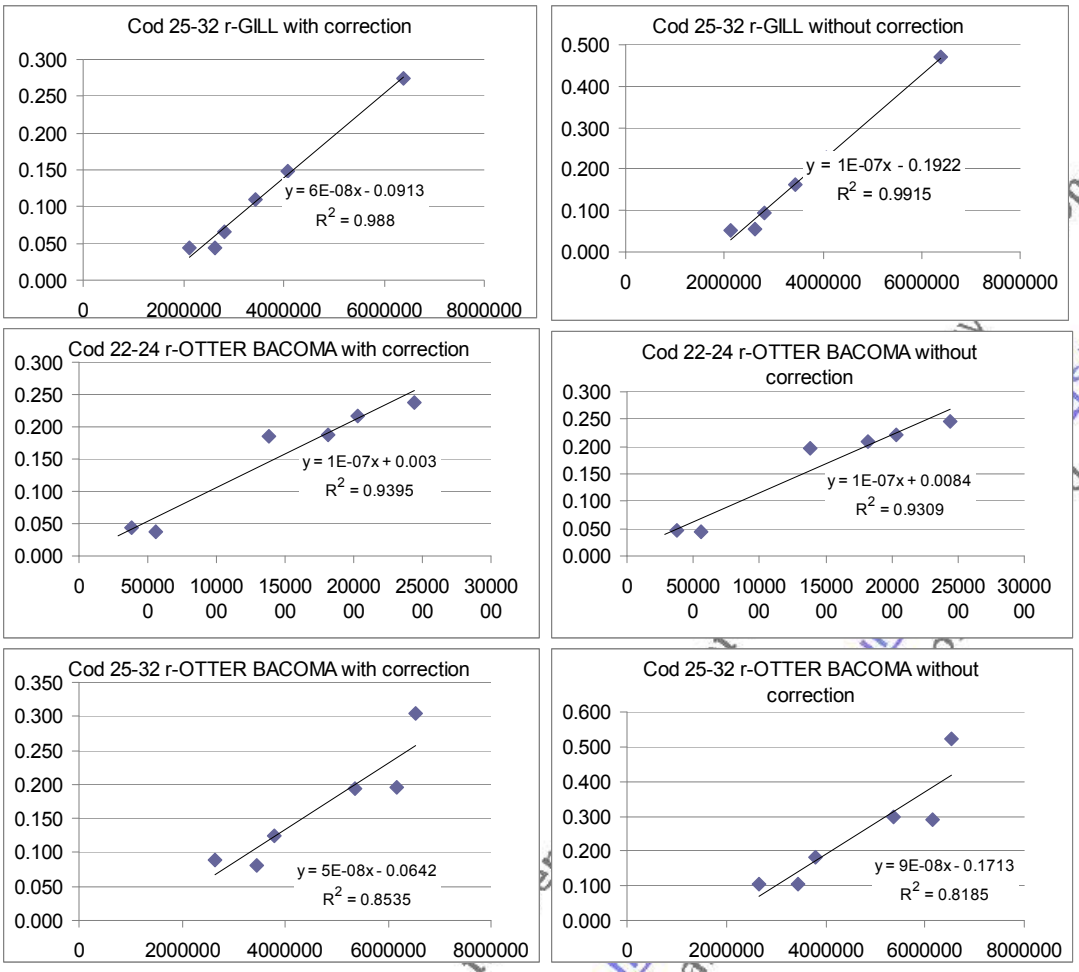


Figure 11.3.5.1. (continued)

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APPENDIX II: EXPERT DECLARATIONS

Declarations of invited experts are published on the STECF web site on https://stecf.jrc.ec.europa.eu/home together with the final report.

European Commission

EUR 24809 EN **– Joint Research Centre – Institute for the Protection and Security of the Citizen**
Title: Scientific, Technical and Economic Committee for Fisheries. Report of the SGMOS-10-05 Working Group on Fishing Effort Regimes regarding Annexes IIA, IIB and IIC of TAC & Quota Regulations, Celtic Sea and Bay of Biscay.

Author(s): Bailey N., Vanhee W., Davie S., Barratt K., Ulrich Rescan C., Silva C., González Herraiz I., Gómez Suárez F. J., Holmes S., Jardim E., Reeves S., Kempf A., Kuzebski E., Ozernaja O., Raid T., Vermand Y., Beare D., Neat F., Dransfield L., Mitrakis N. and Rätz H.-J.

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Abstract
SGMOS-10-05 meeting was held on 27 September - 1 October 2009 in Edinburgh (UK), while the SGMOS-10-04 meeting, which contributed to the report of all 3 regions, the Baltic Sea (1), Annex IIA areas and the Celtic Sea, Bay of Biscay (2) and Western Waters as well as the Deep Sea (3). This section of the report covers the Annex IIA areas (Kattegat, Skagerrak, North Sea including EU part of ICES Division II, Eastern Channel, Irish Sea and to the West of Scotland), the Celtic Sea, Bay of Biscay and provides fleet specific trends in catch (including discards), nominal effort and catch (landings) per unit of effort in order to advise on fleet specific impacts on stocks under multiannual management plans. STECF reviewed the report during its April 2011 plenary.

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The Scientific, Technical and Economic Committee for Fisheries (STECF) has been established by the European Commission. The STECF is being consulted at regular intervals on matters pertaining to the conservation and management of living aquatic resources, including biological, economic, environmental, social and technical considerations

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